474 465 of the amount harvested in excess of the plan; for sunflower seed, soybeans, rapeseed, and flaxseed, one-third; for milk, 15 percent; and for sugar beets and cotton, an extra 50 percent of the average official delivery price for each additional quintal (220.46 pounds) produced above the plan.

These bonus payments are distributed to individuals on the basis of the number of workdays earned, and they are in addition to the payments described earlier. There is, however, an important prerequisite for eligibility to these bonuses: A recipient must have put in a certain minimum number of *actual days* of labor during the agricultural season from March 1 to November 10. This requirement is in addition to the provision of the decree of May 27, 1939, and April 17, 1942, that a member of a kolkhoz must earn a certain minimum number of workdays during a year in order to be in good standing.

In many cases the bonus scheme was reported to have been nullified by the setting of production goals beyond the reach of even the most efficient farmers. The better kolkhozy, with their high standards of performance, were said to be particularly affected by this malpractice. In recent years, little has been heard of the bonus payments.

In 1937, the latest year for which detailed data are available, an average of 438 workdays were credited to a kolkhoz peasant household and 194 to an able-bodied worker; 21.2 percent of the kolkhoz workers were credited with 50 or fewer workdays; 15.6 with 51 to 100; 25 percent with 101 to 200; 18.4 percent with 201 to 300; 11.3 percent with 301 to 400; and 8.5 percent with more than 400 workdays.[47] Among those who earned only 50 workdays, or less, there were undoubtedly many young persons and women with family responsibilities. In the group that earned most—more than 300 workdays—there was probably a heavier representation of the more efficient kolkhozy, where labor is more fully and effectively employed.

● [462] By a decree of May 27, 1939, there was established a minimum number of workdays for each member of the kolkhoz without distinction as to sex. The country was divided into three zones, and for each a corresponding minumum of 60, 80, and 100 workdays was set up. Nonfulfillment of the minimum was penalized by expulsion from the kolkhoz and loss of kitchen-garden plots. The minimum was raised during the war by a decree published in *Pravda*, April 17, 1942. A novel feature of this decree was the specific allocation of the required minimum of work during different periods of the year. For instance, in a kolkhoz of the Moscow Province, 25 workdays "must be worked up to June 1; 25 between June 1 and August 1; 35 between August 1 and October 1, and the remaining 15 workdays after October 1." Those who did not fulfill these requirements without valid reasons are liable on conviction by court to a penalty of up to 6 months of "correctional labor" in the kolkhoz and a deduction of 25 percent of their pay in favor of the kolkhoz treasury.

To sum up, earnings of the peasant from his work in the kolkhoz depend on four factors: first, on the nature of the tasks assigned to him and their rating in terms of workdays; second, on his performance of these tasks—the quantity and quality of the work done; third, on the output achieved by the brigade or zveno, which serves as a basis for adjusting upward or downward the number of workdays earned and

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[47] SAUTIN, KOLKHOZY VO VTOROI STALINSKOI PYATILETKE, p. 38.

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> The wards [illegible] the children's homes who have reached age 12 are trained at the workshops or at the agricultural stations of such homes. . . . Once they have reached age 14, they are sent either to the trade, railroad, or factory-shop schools or to work at some industrial enterprise. . . . The wards of the labor colonies of the Ministry of the Interior of the USSR . . . are sent to trade, railroad or factory-shop schools . . . or to work at some industrial enterprise after they have reached age 14 and have completed their period of confinement to the colony. . . .[63]

883
738
466

Article 122 of the Soviet Constitution begins with this proud statement: "Women in the USSR are accorded equal rights with men in all spheres of economic, government, cultural, political, and other public activities." It is true that women are paid the same wages as men for the work of the same quality and quantity. But they are also required to perform equal tasks with men. Their equality must sometimes appear to them rather oppressive. The last twelve years' evolution of Soviet labor legislation has pointed with insistence toward the equality of both women and juveniles 16 years old with adult men—equality of tasks, and equality of labor duty. 462

> Taking into consideration the physiological particularities of the female organism, the Code of Labor Legislation forbids employment of women on particularly heavy or harmful to health occupations (Article [illegible]). The list of such occupations was approved in 1932 by the People's Commissariat of Labor of the USSR. Because of the uninterrupted improvement [illegible] and amelioration in the health conditions of work this list was altered later on. For instance, women were admitted to work as railroad engineers and [illegible] women were allowed to work on all occupations [illegible] except for a few especially arduous tasks. Simultaneously [illegible] the prohibition of employment of women on especially [illegible] established for women lower maximal norms [illegible] of loads than for men. For instance, [illegible] is the maximum of the load which adult women may be asked to carry [illegible] an even surface. The corresponding maximum load for men is [illegible] kilograms.[64]

An adult woman means here a woman at least 18 years old. One may imagine how Soviet women must rejoice in equality with men when they work as railroad engineers or railroad stokers, on loading operations carrying by hand loads weighing some 20 kilograms, in the mines as underground workers, or on night shifts. Women who are not pregnant enjoy equality insofar as night or overtime work is concerned: "According to Article 131 of the Code of Labor Legislation pregnant women are not admitted to night work. Beginning with the fourth month of pregnancy they are not required to perform overtime work."[65] Except for a few occupations, women may be employed on any underground job, exactly like juveniles 16 years old.[66] When women employed on loading or unloading operations are provided with vehicles for transporting loads, their maximal norms are as follows: 50 kilograms, if they [843]

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462 use wheelbarrows; 60 to 115 kilograms, depending on other factors, if they use small carts with two, three or four wheels, and 600 kilograms, if they use rail trucks.[67]

The deterioration in the situation of women, or, as Soviet authors would say, the improvement in their equality, was marked by the following dates: the decree of the Council of People's Commissars of November 1, 1938, bestowing on women the privilege of equality in the occupations of railroad locomotive engineers and stokers and of locksmiths repairing locomotives; the decision of the All-Union Central Council of Trade Unions of June 13, 1940, conceding the right to work on fluvial transport, except as stokers on steam boats and as sailors on the cargo-passenger boats; the decree of the Council of People's Commissars of October 25, 1940, opening the mines to women, except for a few particularly difficult occupations; the Edict of the Presidium of the Supreme Soviet of July 8, 1944, allowing women to work overtime and at night.[68] Stalin said at the 17th Congress of the Party: "Women constitute an immense labor army and they educate our children, our future generations, that is to say, prepare our future."[69] They are most certainly looked upon by the Soviet State as an immense labor army; one may wonder only if they are left much leisure to educate their children.

Serfs attached to their jobs

The basic concept of the Soviet labor relationship consists in its indefinite duration. The Edict of the Presidium of the Supreme Soviet of June 26, 1940, [illegible] Article [illegible], Paragraph 2: "The departure from an enterprise or office as well as a transfer from one enterprise or office to another may take place only with the permission granted by the director of the enterprise or the head of the office."[70] Once a worker or an office employee has been hired by an enterprise or office, he may not quit his job without the express permission of the management of the enterprise or of the head of the office, the latter being themselves restricted in their freedom to grant such a permission to situations which are foreseen by State legislation. The Soviet worker or office employee is legally bound to his job, his factory, mine, office, or any other place where he works. The analogous position in the Middle Ages was called serfdom, the serf being a peasant bound to the soil of the village and having no right to transfer elsewhere without the permission of his landlord. Today the Soviet citizen—worker, official, or collective farmer—is in a similar condition. He is bound to his place of employment for the rest of his life unless the State decides that he might be granted the required permission to transfer to another job. Actually, the State comprises other individuals who happen to exercise State powers: the leaders of the Communist Party, who establish by law the conditions under which a worker or an office employee might be allowed to quit his job, and managers of factories or heads of offices (high

59: Kulski S-4 (no date)1954 R1 Soviet Union R1

vites) pay 0.50 r. fee for each 50 r. of wages or 1 percent of their wages; those 467 who have a salary higher than 1000 r. pay 1 r. for each 100 r., or, rather surprisingly, also 1 percent. There is no progressive tariff.[3]

According to V. V. Kuznetsov, former leader of Soviet trade unions, they include at the present time over 90 percent of all Soviet officials and workers.[4]

The Statute of the Trade Unions defines the purpose of their activities. It lists as the first objective: "To organize the socialist competition of workers and officials for the fulfillment and overfulfillment of State plans, for the raising of labor productivity, the improvement in the quality of production, and lowering of its cost." This aim corresponds exactly to the most vital interest of the State as a general employer. The second objective will be better understood if one bears in mind that it involves the activities of the supreme organ of the trade unions, namely the All-Union Central Council of Trade Unions, a body controlled by its chairman N. M. Shvernik, alternate member of the Presidium of the Central Committee of the Party, and composed of high-ranking members of the Party who cannot be expected to oppose the Government which includes their immediate superiors within the Party: "To participate in planning and regulating of wages of workers and officials, in working out various systems of wages, their socialist guiding principle is the payment of labor according to its quantity and quality; they strive to introduce new progressive norms of output and they see to it that labor should be correctly assessed and paid in piece rates and progressing bonuses." This statement is a wholesale approval of the governmental policy of wide differentiation of incomes with ever-increasing norms of output.

Other objectives are administrative, because the trade unions have become a part of the State administration. Thus, trade unions must "exercise supervision over State labor protection and industrial security . . . [must] administer State social insurance, etc." If the administration of social insurance and of labor legislation were not in the hands of trade unions, the State would be involved in an additional expenditure by having its own network of appropriate administration. As a matter of economy, the former Ministry in charge of such administrative questions, the Ministry of Labor, was liquidated, and its functions were transferred to the trade unions. Trade unions have to "attract women into public, productive, and social life"; this idea corresponds to the [462] wishes of the State and Party leadership of using the work of women to increase the available manpower. Trade unions "conclude collective agreements [468] with the management of concerns." This objective sounds like the traditional one of any free trade union; but the substance of a collective agreement being determined beforehand by State regulations, there is nothing left to bargain for between management and employees. Therefore, the practice of collective agreements was quite realistically abandoned altogether for several years to be revived in 1947 as a means of State propaganda. Trade unions "assist their members in raising their ideological-political and general educational lev-

59: Kulski S-4 (no date) 1954 RI Soviet Union RI

4) Two-thirds of the average wages are paid during the whole maternity leave to: a) women who have been employed by their present enterprise for a period shorter than one year but longer than three months, the latter period being the minimum generally required; b) women building-workers who have been employed by one or several enterprises for less than the ten months out of the twelve that preceded the maternity leave. 745 562

5) Non-members of the trade unions are always paid half of their average wages for the first twenty days of the maternity leave and two-thirds for the remainder of the leave.[58] [467]

The discrimination against women non-members of trade unions is not serious because these organizations are open to every employee. It might affect the economic situation of peasant-women who are employed on the basis of one-year contracts and who are not admitted to a trade union because they do not lose their status of peasants until this temporary contract is replaced by a permanent one.

The other distinctions correspond to the general policy of the Soviet Government to stabilize manpower by any means. Actually, the Party does not see in a pregnant woman only an expectant mother. It also gauges her economic usefulness to the State. As usual, the State overshadows the living individual. The policy of the Communist Party in attracting women to such heavy occupations as coal-mining, building, or as railroad-engine drivers and stokers is interesting. The equality of women for heavy tasks is fully realized. [462]

State employees (excluding as usual the peasants), who are the parents of a newly-born child and whose combined wages do not exceed 500 roubles per month, receive an allowance of 300 r., if the father or mother has been employed by the same enterprise for at least three months. This sum of 300 r. is divided as follows: 220 r. are paid immediately at the birth of the child and the remaining 80 r. when the baby has reached the age of five months. Eighty roubles is not much, but the State does not want to risk them by a hasty payment, when the child might not survive the five months. The single allowance of 300 r. would go to the very poor people who are unskilled workers. Usually the joint income of skilled workers would be higher than 500 r. a month, as Soviet sources affirm that the latter sum is the average income for State officials or workers. A skilled worker in lower categories of skill might also benefit by that allowance if his wife is in poor health and does not herself work despite the general labor duty that applies to women as well.[59]

11. *The two pyramids: industrial might and social stratification*

The Soviet system of social insurance has one advantage: its wide coverage of practically all risks. Its weaknesses are two: the low amounts of pensions, because of the low wages and lack of interest by the State in citizens who have ceased to be economically useful; and its discriminations which usually cor- 745

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of whom, we would estimate, some 60 million were in the working age 162
groups, 15–64. This left some 66 million in the same age groups outside 464
of agriculture, of whom about 36 million were workers and employees, and the remainder artisans, members of armed forces, students, invalids, camp and prison population, and dependents. How rapidly the population in the working age groups outside of agriculture can grow will undoubtedly determine how rapidly nonagricultural employment will expand, and therefore also how rapidly the whole national product will be able to grow.

It is rather clear that the nonagricultural population in the working ages cannot continue to expand for the next twenty years at anything like the rate at which it has been expanding heretofore. If we postulate a decline in the agricultural population (between the ages of 15 and 64) as extreme as by a quarter—and this means a very considerable rise of labor productivity in agriculture considering the demands which will be inevitably made on it by that time—this would leave some 130 million for the nonagricultural population of working age or twice the number we have assumed for 1950. The share of workers and employees in the nonagricultural population is also conjectural, but it is difficult to see how it could be considerably higher proportionately than in 1950, when a large number of women and youths were gainfully employed. Of course, the claim made by the armed forces and by the forced labor camps in the future is a great unknown. However, a doubling of the number of workers and employees within twenty years means a yearly rate of increase of only 3.5%, or very much below past Soviet experience. A shortening of the present long work-week may hold down the increase in labor input even further.

A few points counteracting the effects of the slowing down of the 464
growth of the nonagricultural labor force have to be considered. The sex 462
composition of employment may be expected to move towards a higher 369
proportion of males, as the present unbalanced age groups are replaced by newer generations, and as the economic pressure for women to seek employment also diminishes with the improvement in living conditions which must be anticipated, to some extent at least.[23] Even more serious is the present shortage of males in agriculture, and some correction of this situation seems also to be expected with time. Hence, some improvement in both urban and rural productivity may take place on account of this factor alone. Furthermore, a slower rate of absorption into nonagricultural employment may be conducive to greater efficiency of the whole nonagricultural sector. Another point to consider is the quality of the additions to the nonagricultural labor force. With industrialization and the mechanization of the countryside, the recruits of the future will have

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[23] See Shimkin, *op. cit.*, p. 111.

162 464 tive to children increased. It is in good part explained by the fall in the number of persons under 16 in the labor force, due to the great rise in school attendance. In addition, the large-scale population migration from the farms apparently resulted in a loss of females from the labor force, expressed as a percentage of the female population 16–59—from 76.6% in 1926 to 67.0% in 1939. With the rural-urban shift, many females who had been in the agricultural labor force (1926) failed to enter the organized (state and cooperative) branches of the urban labor force. They either left the labor force or remained in it in a private capacity—strictly speaking, as "nonco-op handicraftsmen."

464 Reference to the degree by which the indicated increase in the total labor force fell short of some potential obscures the dramatic increases which took place in the most important reported sector, that of "workers and employees," i.e., hired labor. This sector has attracted considerable attention since the Five-Year Plans, because it contains the labor core of the industrialization drive. As shown in Table 3.3 and Figure 3.1, the number doubled between 1926/27 and 1931/32 and has doubled again since then. In the most recent six-year period, 1946–51, the yearly average number displays an almost straight-line increase of 1.8 millions per year, compared to 1.1 millions per year (also almost linear) for the six-year period 1933–38. The increase during the postwar period represents a substantial overfulfillment of the planned increase in workers and employees for the Fourth Five-Year Plan, 1946–50. The plan called for 33.5 million workers and employees by 1950, an increase of 6.3 million during the five years. Actually, by 1950, the average number reached 38.2 million, an increase of 11 million, or 75% over the plan.

The differential growth by sexes is interesting:

1. Once over the marked rise in the First Five-Year Plan, the number of male workers and employees increased by less than two million over the next seven years to 1939, and by another million, partly through annexations, up to 1941. In other words, the decade of the thirties was spent largely absorbing within the industrial system the huge increase in male hired labor which took place in the first years, rather than expanding the number much further. The number of males fell sharply during the war and regained its prewar level probably no earlier than 1949.

462 2. The number of female workers and employees, on the other hand, has increased substantially every peace-time year since 1926; and the fall during the war, 3 million, was moderate enough, all things considered. The number doubled by 1932, doubled again by 1941, and has risen another 35% since then. The increase in the size of the female hired labor force to a position close to equality with males is an outstanding characteristic of Soviet labor force development to date. However, the observer is struck as much by the relatively *slow* annual rise in the number of

males, as he is by the relatively *rapid* rise in the number of females. The 462 situation would seem to be only partly explained by the effects of the early thirties (reaction to collectivization, etc.) and the war. Perhaps the balance of the explanation lies with the statistical deficiencies and non-reported labor noted above.

From 1926 to 1939, the number of workers and employees increased 464 partly through the increase in the adult population and partly at the expense of other sectors in the labor force, notably agriculture. In the succeeding period, 1939–50, on the other hand, the increase in workers and employees entailed no decrease, and probably an increase, in the other sectors taken together—for territory comparable to 1939:

THE LABOR FORCE OTHER THAN WORKERS AND EMPLOYEES, FOR COMPARABLE TERRITORY[20]
(Thousands)

	Male	Female	Both sexes
1939	33,194	28,855	62,049
1950	33,100–37,900	30,100–32,400	63,200–70,300

The increase in the worker and employee labor force was undoubtedly [727] limited by the war and reconstruction, while the supply of labor generally was augmented by the entry of large classes into the adult age group. This may explain why, in spite of excess deaths during the war, the reported increase in the number of workers and employees by 1950 could take place at the same time that the number in the other sectors (comparable territory) remained constant or even increased. This discussion focuses attention on the worker and employee sector as a priority sector from the standpoint of manpower allocation. Perhaps, in addition, certain sectors within the "other sectors"—military and forced labor, or both—also absorbed labor on a relatively large scale. The worker and employee sector may have had to share the net increase in the supply of labor with other expanding sectors. For the dates involved, this is a practical question only with respect to forced labor, because the increase in the military, from 1.5 million males in 1939 to, say, 3.0 millions in 1950, is relatively small.

Of more general interest, especially in comparison with 1926, is the 464 distribution of the labor force between the agricultural and nonagricul- 162 tural sectors. For 1926 there are complete data, and the labor force is readily divided into the agricultural and nonagricultural sectors. For 1939, only a rough approximation to this division is possible, because of

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[20] The 1939 figures are derived as the total labor force minus the number of workers and employees, Table 3.2. The 1950 figures are derived as the total labor force, Table 3.4, minus the number of workers and employees, Table 3.3, minus the estimated number of nonworkers and employees in annexed territory (4.5 million males, and 3.5 million females; see text, below).

162 1.71 (see Table A 13). It is probable that the age structure of the urban proletariat differed less from that of the total population in 1939 than in 1926. Even so, this ratio of dependents per worker 464 (1.62) would seem to be a maximum value for the worker-employee classes in 1939, *prior* to adjustments for change in the proportion of women among all workers and employees.

[462] (4) There was a gradual increase in the employment of women during this period. The percentage of women among gainful workers shown by census statistics is usually higher than the corresponding proportion shown by employment statistics, owing to the greater frequency of unemployment among women. The proportion of women among workers and employees according to the 1926 census was 30.7 percent (see Table A 12). The proportion of women among workers and employees, according to employment statistics, rose from 27.2 percent in 1929 to 35.4 percent in 1937 and 37 percent in 1940.[7] Interpolating, we assume that the proportion was 36.2 percent at the time of the 1939 census, i.e., 56.74 women per 100 men. The transfer of women from a dependent status to that of workers and employees corresponding to this figure lowers the expected maximum ratio of dependents to workers, for 1939, from 1.62 to 1.41 (see Table A 13). The net effect of these observations is to suggest that the ratio of dependents per worker in the worker-employee sector of the Soviet population in 1939 must have been very similar to the figure for 1926 as adjusted to take account of the transfer of children from worker to dependent status (i.e., 1.38).

[72] A different series of ratios, based on budget studies of the families of workers in heavy industry, covering the years 1930-1935, is reported in *Trud*.[8] In this series the number of dependents per worker is as follows: 1930, 2.05; 1931, 1.73; 1932, 1.73; 1933, 1.69; 1934, 1.66; 1935, 1.59. The average size of family (sometimes confused with the dependents-worker ratio) in this sample runs from 4.02 in 1930 to 3.80 in 1935—a decrease of only 5.5 percent, in contrast to the decrease of 22.4 percent in the dependents-worker ratio during the same period. Unfortunately, there is no exact information about the sampling procedure on which these statistics are based. Single persons are usually inadequately represented in budget studies. Where this is the case, the ratio of dependents to workers is, of course, higher than in the corresponding population. The dependents-worker ratio in this series declines sharply from 1930 to 1935, probably because of the increased employment of women, but one cannot safely assume that this indicates a general decline in the ratio of dependents to workers in the families of all workers and employees during the intercensus period, 1926-1939.

For our purposes it seems preferable to rely on the census data for 1926, with adjustments to take account of changing conditions during the intercensus period, rather than to use the data from an unspecified sample as reported in *Trud*. We will, therefore, proceed on the hypothesis that there were 141 family dependents per 100 workers and employees in the Soviet Union at the time of the 1939 census, applying this ratio uniformly to the major groups of employed personnel. It should be noted that this ratio of 141 is presumably a ***maximum*** value, since it is based on the application of age-specific ratios (from the 1926 census data for families of workers and employees) to the *general* population in 1939, with the specified adjustments, but with no adjustment for differences between the age distribution of the worker-employee sector and the total population.

The estimated population in the worker-employee sector indicated by these procedures is 68,779,000, or 40.3 percent of the total population of the Soviet Union (see Table A 14). This is considerably higher than the corresponding proportion reported for 1937 (34.7 percent), but it is much closer to the 1937 figure than that reported in the 1939 social class distribution (49.7 percent). In view of the arbitrary treatment of many of the factors affecting the determination of this estimate, it would certainly be unwise to treat it as having any high degree of validity. Consequently, we will experiment further with this result and test it against other data.

The miscellaneous group of pensioners, military personnel, and persons of unknown occupational status was reported as 4.2 percent of the population in 1937. This happens to be about the same proportion reported for these classes *plus* the unemployed and children under 10 years listed as gainfully occupied in 1926. The increase in institutional and military personnel had apparently offset the decrease in unemployment and in the labor of children under 10 years of age. Assuming the same proportion in 1939, the number of pensioners, military personnel, persons of unknown occupational status, and so on, was presumably about 7,160,000 at this time.

These estimates of worker-employee and miscellaneous sectors leave, as residual, a population of

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[7] See American-Russian Institute, *Russia at War*, March 31, 1942.

[8] *Trud v SSSR*, 1935, Title 44?, p. 342.

137 similar in character to that which crosses Canada. Next to the
131 tundra, in the Arctic, trees grow slowly and the forest has no
commercial value. This area is even more empty of population
than the tundra. Large areas in the north are nearly impassable
due to fallen trees, swamps, and a tangle of bushes and vines. This
is no place to make a forced landing while flying, for even if one
can walk away from a wrecked plane, there is no place to go.
[491] There are no roads, and all travel is by water, or by air.

137 Farther south, with longer summers, the stunted Arctic taiga is
131 replaced by excellent forests of pine, spruce, and larch. In normal
313 years, shipments move to Western Europe, but so great is the
[439] domestic demand that there is little export surplus. The Soviet
Union is in the midst of a boom economy and the demand for
lumber is heavy. Despite extensive cutting, the normal growth is
so vast that the country can look forward to timber supplies for
a long period. Wood is still the cheapest fuel.

The original forest cover has largely been cleared from the now-cultivated agricultural plains, but excellent stands of commercial timber remain in the hill lands of the Urals and elsewhere. The Soviet Union as a whole is deficient in hardwoods such as oak and maple, so that most furniture, railroad ties, and log houses must be made of less durable softwoods.

313 While the greatest forest areas of the Union lie in Siberia, lumbering operations are developed chiefly in areas more accessible to the market needs of Soviet Europe. East of Leningrad are two great lakes, not much smaller than those in North America. Around their rocky shores are picturesque coniferous forests. The timber of this area enabled Czarist St. Petersburg to become one of the major lumber ports of Europe.

The decades since the revolution of 1917 have seen a great increase in construction, especially in the cities. Expanding industry and railroads have called for large amounts of lumber. Trees are usually rafted to saw mills, so that every river carries its quota of logs. The junction of a river and a railroad in the taiga is sure to
mean a saw mill. While women are not required to work, there
● [462] are so many jobs to be done that one may commonly find women
working on lumber rafts or in saw mills. In fact, women do all kinds of jobs in the USSR. In part, this is economic necessity; in part it reflects the rapid expansion of the economy in a pioneering situation.

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657 additional child. Monthly allowances go from
168 40 rubles for four children to a maximum of
651 150 rubles for ten or more children.[9] These
[465] grants must be seen against an average take-home pay of about 600 rubles per month for the period 1948-1952,[10] and a possibly higher figure for the period after 1952.[11] Thus, while it is doubtful that except in a minority of cases the provision of these grants will act as a positive financial incentive to having large families, nonetheless the financial deterrent to such families may be eased considerably, particularly for the low income families, who must spend a sub-
161 stantial portion of their budget on food. Scattered evidence from former Soviet citizens indicates, however, that for the time being the Soviet family tends to grow smaller, rather than larger, as might well be expected from a society in a rapid stage of industrialization and urbanization.

745 Women who are employed in the labor force
843 are allowed leave with pay for 35 days before and 42 days after the birth of a child. In case of complications or the birth of twins, the postnatal leave is extended to 56 days or even more on the recommendation of a medical commission. In some cases, mothers may also receive small stipends to cover expenses for layettes from the system of social insurance (administered by the trade-unions) in the case of women employed as workers and employees or in the case of peasant women from the social fund of the collective farm. Emergency loans covering unexpected expenses arising from the birth of the child may also be granted by social in-
745 surance organs. In addition, the code for the
843 protection of labor embodies specific measures
466 protecting the mother or future mother from
462 arbitrary actions on the part of management. For example, industrial managers cannot refuse to employ nor can they dismiss a woman because she is pregnant or because she is nursing her

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[9] Article 2, 1944 decree, as amended in 1947; see *Izvestiya*, November 26, 1947, p. 1.

[10] Janet G. Chapman, "Real Wages in the Soviet Union, 1928-1952," *The Review of Economics and Statistics*, XXXVI, No. 2, 134-56, May, 1954.

[11] For some impressionistic data on the subject see Mac Duffie, op. cit., as well as Michel Gordey, *Visa to Moscow* (New York, A. Knopf, 1952). 6 - A

463 162✓ education, about 27 percent were trained in engineering and related fields and employed in industry, manufacturing, mining, transportation, and communication. In that year about 16 percent were health field professionals, about 9 percent were in agricultural fields, and only 6 percent were in all socioeconomic service fields.

Some Social Aspects of Soviet Professional Labor Force

1. *Place of Women Among Soviet Professionals*

462 ● During the last 25 years, the participation of women in professional occupations in the Soviet Union has increased considerably. These changes in the relative proportion of women among professionals in individual fields are summarized in table 7.

The enormous increase in the relative proportion of women in the postwar period came about as a result of the war, and also because there were large numerical increases of professionals in the medical and eductional fields where the relative proportion of women continued to be extremely high. The relative proportion of women among professionals in 1950 was only slightly higher than the relative proportion of women among all workers and employees. In 1950 women accounted for 45.7 percent of all Soviet salaried persons employed in the nonagricultural labor force of salaried workers and employees.[26]

TABLE 7.—*Relative proportion of women among Soviet professionals (Year end)*

Occupational fields	*Percent of women among all professionals* 1929	1940	1951
Engineering	14. 7	19. 4	--------
Agricultural	9. 2	24. 4	--------
Socioeconomic	8. 2	26. 1	--------
Educational	21. 0	37. 0	--------
Health	47. 2	56. 9	--------
All fields	23. 5	32. 6	50. 5
Total number, women professionals	68, 000	277, 000	830, 000

Sources: The original 1930 distribution was obtained from *Nar Khoz—1932,* 488–540, and *Itogi Pervogo FYP,* 217. Data for 1940 were obtained as a projection of enrollment trends for women during the period 1930–40 upon data for graduations (see table A–3 in the appendix to ch. IV). The 1939 census serves as a check point (it also gives about 32 percent for women). The 1951 total number of women professionals (830,000) was reported in *Bol'shevik,* No. 12, 1952, p. 4. The percentage was derived on the basis of this total number of women professionals and the estimate of all professionals employed in the national economy in that year (table C–12 in the appendix to ch. VI). The percentage of women professionals in different occupational fields is not available.

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[26] As estimated from Eason "Population and Labor Force" in A. Bergson, *Soviet Economic Growth,* 110.

[illegible] The Hun swarm came from beyond the lower Don and Volga. In blood
175 they were of Tatar or "Ugrian" derivation. Their language, like that of
144 all the native population east of the Slav Russia, belonged to the Ural-Altaic.
117 Contemporary accounts show them to have been typical Mongoloid
nomads. From southern Russia they extended their incursions over most of western Europe. Soon after their defeat in France their dread chief Attila died, the power which they had established in Pannonia and central Europe rapidly crumbled, their confederates, among whom were some of the Germans and even Ostrogoths, broke away, and what remained of the horde, no longer able to hold its ground, retraced its steps eastward and was lost to sight. Exactly what effect this Hun invasion and occupation had on the population of southern Russia and central Europe is difficult to gauge, but it was probably mainly that of destruction or dispersion.

THE KHAZARS

175 What remained of the population in southern Russia-to-be after the
101 Hun invasion now became gradually infiltrated with a new ethnic unit,
[144] the Khazars. The Khazars, according to many indications, were of Caucasian
or anterior Asian extraction, and were related to the Georgians
and Armenians. There were with them, however, also the so-called "black
Khazars," who have not yet been identified. Their history in southeastern
Russia extends over a considerable period of time—to the eleventh century.
[131] Between 600 and 950 the territory they controlled is said to have
spread from the Caspian Sea to the Don and later even into the Crimea.
● [illegible] They were relatively civilized people, who built small towns and engaged
extensively in sea trade, which earned them the name of the "Phoenicians"
[651] of the Caspian and Black Seas. In the earlier part of the seventh
century their power was such that they compelled the agricultural Slavs
of the Dnieper and even those of the more northern regions to pay
797] tribute. About 740 they accepted Judaism. But during the ninth and tenth
centuries they were slowly outnumbered by the Russians, and in the
eleventh century they practically disappear from the stage. Remnants
of them probably still exist under different name or names in the Caucasus.

TURKISH AND TATAR TRIBES

175 The Khazar occupation of the regions which now form southeastern
167 Russia was, however, far from uniform, dense, or continuously peaceful.
101 The waves of incursion of the Turkish and the Tatar tribes from farther
741 east followed at greater or shorter intervals, and over approximately the

175 in various parts along these boundaries and became their privileged life-
101 long and hereditary defenders. Owing to their prowess both as horsemen
[463] and fighters, the term "Kazak" in the course of time became surrounded, even in Russia itself, with a semiromantic and heroic halo, which was not
[144] wholly undeserved. The original Russian Kazaks of the fourteenth to sixteenth centuries were in the main of Ukrainian derivation; but in the course of time new contingents were formed progressively farther east, and these were of mixed Russian and Asiatic composition.

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A few known details regarding the Ukrainian Kazaks may be of interest. During the fourteenth and fifteenth centuries Russian refugees before the invading Tatars are recorded to have settled on certain islands in the Dnieper River. They were hunters, fishermen, and, when occasion demanded, fighters, gradually developing into strong, bold, and resistant groups, loving the hard frontier life with its liberties and dangers. Similar groups developed in time all along the limits of the southern steppes, and became the scourge of the Tatars and Turks, though occasionally a source of trouble to the Poles and even the Russians. Their military value was in time recognized, leading to the regulation and extension of the Kazak system over southern Russia, Caucasus, central Asia, and Siberia, until the Kazak became the regular forerunner, scout, and protector of the Russian armies and Russian colonies from the Danube to the Pacific Ocean. Their faithfulness to the Czar was proverbial, and they were much used by the government for quelling internal troubles.

Until the first World War there existed about 12 subdivisions of the Kazaks, the best known of which were those of the Don, Orenburg, Ural, and Siberia. Their free institutions, interesting customs, and especially their exploits in the conquest of Siberia and in the Napoleonic invasion made their name famous. In the period following the 1917-1918 revolution the Don Kazaks, the chief unit, remained for a time on the side of the "interventionists," but since then have been strong components of the Soviet people. Their life is faithfully pictured in his "Quiet Flows the Don," by Shelekhov, himself a Kazak by origin and one of the foremost of present Russian writers.

THE WESTERN AND NORTHWESTERN NATIONS

THE POLES

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The Poles, the old "Lekhi" and "Poliane," are Slavs, derived in prehistoric to early historic times, like the Russians, Czechs, and other peoples, from the common autochthonous Slav nucleus north and east of the Carpathians. They are admixed with the Russians and to some extent

4: Hrdlička E-5 (no date) 1942 R1 Soviet Union R1

insignificant. They occupy the northernmost limits of the Finnish and Russian territories, the Lapps extending into Scandinavia. The present-day Lapps are much intermixed with the northern Whites. 101 144 [131]

FINNO-UGRIAN PEOPLES OF THE INTERIOR OF EUROPEAN RUSSIA

The Finno-Ugrians are located principally on the middle and upper Volga and the Kama, and represent the remnants of the primitive native populations that once covered much of central and eastern Russia. They have long been in the gradual process of amalgamation with the Russian population. They are known principally as the Mordva, Tcheremis, Voguls, and Votiaks.

EUROPEAN TURCO-TATARS

There are approximately seven million Turco-Tatars in European Russia and the Caucasus. They are divided into the Crimean Tatars, Kazan Tatars, the Bashkirs, the Tchuvash, and the Kirghiz, with many minor units. They still are scattered over a large portion of southeastern European Russia but are more or less admixed and have no racial cohesion. 161 162

PEOPLES OF THE CAUCASUS

The Caucasus has been since ancient times the eddy and refuge of remnants of nations, and there are in its fastnesses many interesting units, some of which it is difficult to classify. The strongest single element of the Caucasian population today, however, is the Slav (approximately 40 percent of the total), which is followed by the Turco-Tatar, Georgian, and Armenian. 101 144 162

THE ARMENIANS AND GEORGIANS

Both the Armenians and the Georgians are ancient White units. Both, though especially the Armenians, have suffered from many invasions, and both are mixed peoples. 101 175 144

The Armenians occupy also the adjacent parts of Turkey and Iran (Persia). They are known to history from at least seven centuries before Christ and are related primarily to the old Tadjik population of Iran, secondarily to the pre-Turkish peoples of anterior Asia. They are in general dark-complexioned people, of medium to moderately above medium stature and predominantly high brachycephaly. They are famed as traders. The part formerly under Russia joined the Soviet Union as one of its constituent republics after the 1917 Revolution. [142] [463]

101 175 144 The Georgians, or Gruzins, are an old and important trans-Caucasian group, related by language as well as by blood to a number of other tribes of the region. They appear in history in the twelfth century B. C. Their earliest name, curiously, was "Iberians," the same as that of the people of pre-Roman Spain, and some connection between the two, though not established, may have been possible. They were among the very earliest [633] of Christians. Their capital, Tbilisi (520,000 inhabitants)—formerly Tiflis—dates from the middle of the first century A. D. At the beginning [721] of the thirteenth century the country was devastated by Genghiz Khan, and this was repeated in the fourtheenth century by the followers of Timur. Toward the end of the eighteenth century it was largely under the domination of Iran and Turkey; in the period 1801 to 1829 it gradually joined Russia, in part voluntarily; and in 1921 it became a Soviet republic.

[162] [141] The Georgians or Gruzins proper constitute approximately 64.5 percent of the population of 3.5 millions. They are a highly brachycephalic people, which on one hand related them to the prevalent type among the Armenians, and on the other hand to the Tadjiks.

SPECIAL UNITS

THE JEWS

101 175 167 The Russian Jews are in the main the descendants of refugees forced out of Germany during the persecution of the race in the middle ages. Some Jews penetrated into Poland and Lithuania as early as the middle of the eleventh century, but by far the larger number came later, particularly under the Polish king, Kasimir the Great, whose wife was of Jewish extraction. From Poland they spread to Lithuania, Courland, and what is now Ukrainia and Bessarabia. Catherine II, particularly, opened to them the door of Russia.

A small branch of the Russian Jews differing in many respects from the [463] remainder are known as the Karaites. They are principally agricultural and are settled in the Crimea, where they speak Tatar, and in western Russia, where they speak Polish.

The total number of Jews in European Russia before the first World [161] War approximated 4,000,000, of which 1,300,000 were in Russian Poland, and 50,000 in the Caucasus. In addition there were about 50,000 in Siberia and central Asia.

[563] Under the tsarist rule the Jewish poor were allowed to reside only in the towns and hamlets of the present Bielorussia and of the western part of Ukrainia, in the so-called "pale of settlement." Jewish children were

CHAPTER III

Engagement and Dismissal of Workers

THE labour code of 1922 contained separate regulations on working conditions for (1) wage-earners (workers and employees), and (2) persons set to work in accordance with the regulations on compulsory labour. Chapters III–X deal in greater detail with the legislation affecting workers and employees. Of that concerning compulsory labour the following may be said here. 466

Duty to work

The authorities have the power to impose compulsory labour on certain categories of citizen for the purpose of combating natural catastrophes or in the event of a shortage of manpower for tasks of special social importance. Exempt from this obligation to work are, in time of peace, those under 18 years of age, men over 45 and women over 40, persons who have temporarily lost the ability to work owing to sickness or accident, the disabled, pregnant women eight weeks before and eight weeks after childbirth, nursing mothers and women with children under the age of 8 (in so far as no other member of the family can assume care of the child). During the Second World War compulsory work was imposed on certain categories previously exempt. Remuneration for the work carried out under these regulations is fixed by special arrangement.

The duty to work mentioned here (*trudovaya povinnost*) should not be confused with either 'corrective labour' (*ispravitelno-trudovye raboti*; (*cf.* p. 176) or the 'labour mobilization' (*trudovaya mobilizatsia*) of the civilian population which was carried out during the Second World War (*cf.* p. 18).

The right to engage paid labour is in Soviet law mainly reserved for 'juridical persons' (*cf.* p. 170), that is to say state and co-operative institutions, 'social organizations' (*e.g.* trade, political, cultural, etc.) Private persons have the right to engage [463] ●

[463] 466 paid labour for their personal service (*e.g.* domestic servants, secretaries or chauffeurs).

A person can become engaged as worker or clerk either through concluding a *labour agreement* with a person, concern, institution or such-like, or by administrative order, as when pupils from trade schools and higher educational institutions are directed to a specific place of work (*cf.* pp. 44–45).

The right of legal persons to engage workers and clerks is further controlled by directives from the authorities and organizations. Thus State concerns and institutions have the right to engage staff in accordance with fixed lists and planned figures for manpower.

In collective agriculture and artisan-co-operatives (*artels*) the work is largely performed by the members; the return for the members' work varies according to the results of the collective farm's, or *artel's* economic activity, and their working conditions are not regulated by the legislation dealing with the working conditions of wage-earners which this book discusses. These organizations are in certain events and to a limited extent able to engage paid labour.

Thus, collective farms have the right to engage those with special qualifications, *e.g.* agronomists, engineers and technicians. Temporary labour may be engaged for urgent work that cannot be completed by the members themselves by the appointed time, and also for building.

The artisans' *artels* have the right to engage paid labour for auxiliary work that does not constitute the chief purpose of the *artel's* activities and for work requiring special training. According to the normal regulations for *artels* the number of wage-earners should not exceed ten per cent of the number of members. In exceptional cases and with the permission of the State supervisory authority, paid labour may even be engaged for an *artel's* main production.

The Labour Contract

675 466 A labour contract (*trudovoi dogovor*) can be either a verbal or written agreement by which the one party (employee) receives employment with the other party (the employer) in the character

insurance funds and to see to the payment of the pensions to those pensioners who do not have paid employment. 745

Entitlement to a pension

As will be explained in more detail later, a certain qualifying period is normally required before a person becomes entitled to a pension. In calculating this qualifying period all, or (in certain cases) a part, of the time the person concerned has had paid employment as a worker or employee is included. In certain cases even military service, partisan activities, time spent on study at certain educational establishments, work as member of a co-operative artisan organization, etc. are counted. Excluded from the qualifying period is any time the person concerned has been under sentence of corrective labour, even though that labour was performed at his normal place of work.

Pensions can be withdrawn or reduced in certain circumstances, for example when a person is taken into a home for the disabled or a lunatic asylum. Pensions are not paid to persons serving a term of imprisonment or who have been ordered into banishment (*ssylka*) or forbidden residence (*vysylka*) (see p. 174). Certain crimes can be punished with loss of entitlement to a pension (see p. 174).

A person who has more than one reason for claiming a pension (for example old age pension and disablement pension, or a long-service pension and personal pension) can himself choose which of the two he shall receive.

Occupational categories

Wage-earners are divided into three categories according to which the size of the pension varies. The *first* category comprises workers and functionaries engaged on work underground and in certain work that is injurious to health; to the *second* category belong workers and functionaries in the 'leading' industries: metallurgy, engineering, electro-technical industry, coal industry, iron ore, oil, chemical and rubber industries, railways and shipping, concerns producing for communications; and to the *third* category all other workers and functionaries. 463

18: Zirkle N-5 (no date) 1952 R1 Soviet Union R1

One of the major consequences of the forced change from genetics as it 815 is known throughout the world to a local brand called "Michurinism" and of the emergence of the latter's chief advocate, Lysenko, to power is the catastrophic 656 decline in the quality of the personnel engaged in biological and agricultural [463] research. For some time students in the Russian universities had been advised by their professors not to specialize in genetics because the occupation seemed to be too hazardous, and thus the continued emergence of able youngsters, so necessary for the healthful growth of a science, ceased. Some workers who rose to power were charlatans and were interested chiefly in their personal prosperity. Others were scientific innocents and set out to force nature to do their will by Michurinistic practices. The overall lack of success in the field is indicated by occasional articles in *Pravda*. The lot of those who rode to affluence and honor with Lysenko was obviously not a happy one. The first one to be exposed seems to have been Comrade Shaumyan, who lasted just fourteen months from the moment of his triumph. V. A. Shaumyan received great 232 applause when he spoke on August 3, 1948, at the gathering of the Lenin Academy which marked the destruction of genetics. His researches had shown 815 that a milch cow gets her teats pulled from 6 to 7 million times in her life 656 and that this is her chief source of exercise. Shaumyan asked, "Can such a vigorous determining factor of action on an udder applied from generation to generation over an expanse of many years remain without result?" He also stated that the purposeful influences of the environment change the qualities characteristic of the breed, that these changes are not temporary and are therefore inherited. He added that "Following this course any animal breeder will undoubtedly attain success." Later a routine investigating committee visited his institute, examined his annual report and published their findings in *Pravda* (October 5, 1949). Among other devastating criticisms they stated, "Comrade Shaumyan's report is fiction from beginning to end. An unhealthy atmosphere has been created here. Bound to one another by family ties and ties of friendship, the institution's staff members have locked themselves up in the shell of their own personal interests."

Many instances are noted in *Pravda* and in *Izvestia* where nature is resisting being transformed according to plan. Bananas even today do not grow in the Moscow region. Winter wheat still is not being grown throughout the entire Soviet wheat belt. The literal acceptance of the Michurin doctrine has led to many absurdities, but some absurdities are corrected after a time. Marxian environmentalism has had to yield at least at some points, as is shown by the misfortune of Comrade Greben.

The second follower of Lysenko to be exposed was Academician L. K. Greben, who spoke to great applause at the session which outlawed genetics. He seems to have been sincere but not very bright. To quote a single sentence from his speech, "The preparation of zootechnicians in the universities on the basis of formal genetic principles brings confusion to the minds of young specialists to this very day, and hinders us from including properly in general practice the raising of the productivity of pedigreed animal breeding." *(Pravda, August 7, 1948.)* An Associated Press dispatch from Moscow (August 27, 1951) is worth quoting, as it shows what happened to Greben.

> PIGS WEARING BOOTIES EARN SCORN OF RED PRESS
>
> MOSCOW (AP) **A couple of weeks ago L. K. Greben, a Soviet scientist, was criticized by *Izvestia* for trying to improve the breed of hogs by putting sandals on their feet. Today Greben admitted to *Izvestia* that he had indeed made some grave errors.**

21: Kolarz J-4 (no date) 1952 R1 Soviet Union R1

THE SOCIAL TRANSFORMATION OF SOVIET JEWRY

While traditional national and religious ideas still survive among 563 Soviet Jews, the Soviet régime has succeeded in changing their economic structure most radically. The inclusion of the Jews in socialist reconstruction work meant not only the encouragement of class struggle within the Jewish people, but the destruction of the economic foundations on which Russian Jewry was built. The work of the Soviet régime, however, was not a purely negative one since the Jews of Russia were also given new functions in the economic life of their country.

It is true to say that the Soviet régime has changed the Jews even more thoroughly than any other people of the U.S.S.R. In the case of the other peoples the Soviet régime struck at the ruling strata, but the social status of the bulk of these peoples, made up of peasants or cattle-breeders, remained unchanged. With the Jews it was different. As they had been excluded under the Czarist régime from the ordinary economic and social life of the Ukrainian, Byelorussian and Russian peoples, 38·65 per cent of all Russian Jews were forced to be traders and middlemen, 35·43 per cent were artisans, 5·49 per cent had 'unproductive and undetermined professions' and only 3·55 per cent were engaged in agriculture.

The Soviet régime completely destroyed Russian Jewry as it had [463] existed before 1917 and created a new Soviet Jewry, which in 1939 included 30 per cent manual workers, 41 per cent employees and members of liberal professions, 20 per cent artisans, 6 per cent farmers and 3 per cent people of miscellaneous professions.[5] Of the Jewish manual workers of the Soviet Union 28 per cent worked in metallurgy and machine-building industries, whilst only 17·5 per cent were employed in the food industry and 17·2 per cent in the garment industry which are usually looked upon as the more typical 'Jewish industries'.

The new social structure of Soviet Jewry, though an improvement on the conditions in the pre-revolutionary period, is far from reflecting a solution of the Jewish problem. The fact that over two-fifths of all Soviet [647] Jews are either state officials and employees or belong to so-called liberal professions (which in Soviet Russia is a synonym of officialdom), still reflects an unsound situation encouraging anti-semitism.

Those Jews of the Western Ukraine, Western Byelorussia and Bessarabia who survived the war are still subject to the same process of social transformation which their co-religionists in the territories originally belonging to the U.S.S.R. have undergone already. This [441] transformation was not easily achieved, since Jewish traders still flourished in the Soviet Union in the middle of the twenties, during the period of the N.E.P. when capitalism was tolerated within certain limits.
At that time over 18 per cent of all private traders of Soviet Russia were Jews.

dairy products. Woolen and felt goods are also manufactured here. 361
Tyumen' is the western navigation head in the Ob'-Irtysh waterway system. 438*
The eastern terminus of the old Perm'-Tyumen' railroad, the city was the principal entry gate of Siberia until the construction of the Trans-Siberian. It has since become an important river-rail transfer point for grain and lumber.

Tobol'sk, once a mighty fur-collecting city and, until 1824, the administrative center of Western Siberia, lies on the Irtysh at the mouth of the Tobol. It has declined since it was by-passed by the construction of the Trans-Siberian Railroad in the south, and it is now important as a supply point for the northern sections of Tyumen' Oblast, and receives the northern taiga products (furs, game, fish, lumber). Tobol'sk has shipyards, woodworking and metalworking, and light industries.

Ishim, at the intersection of the northern branch of the Trans-Siberian and the Ishim River (a left affluent of the Irtysh), is the center of a grain-growing and dairy-farming district.

THE KHANTY-MANSI NATIONAL OKRUG (capital, Khanty-Mansiysk; 133*
area, 215,500, population, 110,000) was known until 1940 as the Ostyak-Vogul National Okrug, for the former conventional names of the two chief national groups, the Khanty (Ostyaks) and Mansi (Voguls). It occupies the center of the West Siberian lowland, along the lower Ob' River and its affluents. The taiga covers most of the region, with the exception of the many swampy areas at the headwaters of the streams and along the watersheds.

The Russians, who live along the main streams, engage in agriculture, 162
chiefly the cultivation of wheat and barley, and form the majority of 463
the urban population. The Khanty (Ostyaks), the more important of the two basic national groups, live east of the Ob' and the Irtysh rivers, while the Mansi (Voguls) are established in the western section on the slopes of the Urals. The native population is engaged principally in hunting, fur trapping, fishing, and reindeer raising. The main fisheries are along the Ob' at Surgut, Khanty-Mansiysk, Kondinskoye, and Berezovo, and at Lar'yak, on the Vakh, a tributary of the Ob'. Khanty-Mansiysk and the neighboring village of Samarovo have fish canneries and sawmills. In the western section of the okrug at the headwaters of the Konda River, an affluent of the Irtysh, there is a large game reserve for beaver and sable. On the slopes of the northern Urals, rock crystal, Iceland spar, and platinum are found.

The capital, Khanty-Mansiysk (until 1940, Ostyako-Vogul'sk), lies 000

TABLE 23

SIZE OF APARTMENTS OF SCIENTIFIC WORKERS AND SPECIALISTS IN 1940

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Number of Rooms per Apartment per Family*	Scientific Workers		Specialists		Total	Per cent of Total
	Number	Per cent	Number	Per cent		
One	27	54.0	46	66.6	73	61.3
Two	16	32.0	16	23.2	32	26.9
Three	5	10.0	7	10.2	12	10.1
Four	2	4.0	–	–	2	1.7
Total	50	100.0	69	100.0	119	100.0

*Among the respondents, there were no instances of more than one-family occupancy per apartment.

Only thirty-nine families–one-third of the sample–lived in separate, self-contained apartments where kitchen facilities were reserved to their individual use. One-fifth of the group used the kitchen together with at least four other families. This occurred most frequently in reconverted former town houses and in large apartment houses where families had only a single room at their disposition; the communal kitchen was used by as many as forty individuals and sometimes more. Finally, almost one-fourth of all apartments had no kitchens at all; as a rule, these were the most overcrowded ones. The survey also indicated that, in spite of the regulations prohibiting the use of kitchens as dwelling space, infractions were current, even among specialists.[77]

Compared to European or American standards, the housing conditions of these two groups of the Soviet professional intelligentsia in the Soviet Union on the eve of World

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[77] The average-size apartment for the group as a whole was 1.5 rooms: for the scientific workers, 1.7 rooms; for the specialists, 1.4 rooms. The average-size family for the group as a whole consisted of 3.3 persons: the families of scientific workers, 3.0 individuals, those of the specialists, 3.5.

31: Sosnovy S-5 (no date) 1954 R1 Soviet Union R1

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TABLE 24

KITCHEN FACILITIES OF SCIENTIFIC WORKERS AND SPECIALISTS IN 1940

Group	Apartments Surveyed										
	Total	Kitchen Facilities									
		None		One-family Use		Two-family Use		Three-family Use		Four or More-family Use	
		No.	%	No.	%	No.	%	No.	%	No.	%
Scientific workers	50	10	20.0	15	30.0	8	16.0	7	14.0	10	20.0
Specialists	69	18	26.0	24	34.8	11	15.0	2	3.0	14	20.3
Total	119	28	23.5	39	33.0	19	15.9	9	7.5	24	20.1

War II were woefully inadequate.[78] It is not difficult to imagine the housing conditions of the rest of the urban population for whom dwelling space per capita equaled 4.09 sq. m., that is, less than half the average dwelling space of the group investigated in the above survey.

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10. HOUSING CONDITIONS OF THE BUREAUCRACY

Soviet bureaucracy receives particular consideration from the state. The process of its detachment and separation from the bulk of the population, buttressed by unwritten codes of special rights and privileges, developed gradually and imperceptibly became a fact. The ascendent role of the bureaucracy is, as might be expected, reflected in better housing conditions than are enjoyed by the rest of the population, housing conditions which have improved as its position has become consolidated.[79]

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By Soviet bureaucracy is meant the upper crust of Soviet society, the leading personnel in the Party and soviets and in the economic, military, professional, and cultural life of

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[78] The urban housing fund in the United States in 1940 numbered 21,616,000 apartments, broken down as follows:

Number of Rooms	Per cent of Total
1-2	11.2
3-4	32.5
5-6	40.7
7	15.6
Total	100.0

See *Statistical Yearbook 1951*, United Nations, 1952, p. 535. In the above figures the kitchen is counted as a room.

[79] "We must take into account the vital, incontrovertible truth... [that] the estimated number of various contingents being settled at the present time requires... apartments of a so-called superior type, measuring 10-11 sq. m. of dwelling space per person and possessing a higher percentage of auxiliary [utility] quarters and modern conveniences." See *Materialy Vserossiiskovo Soveshchaniya...*, *op. cit.*, p. 45.

31: Sosnovy S-5 (no date) 1954 R1 Soviet Union R1

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A general idea of everyday living conditions is provided by the report of a delegation of the French Mineworkers' Union that visited the Soviet Union in 1936. It is to be remembered that the Soviet miners represent one of the largest segments of the Russian working class. The delegates reported that

> many houses have been built for the workers, but the ones that we saw were small, one-story units consisting of three (rarely four) rooms. A single family does not have the entire house at its disposal, however. An entire family—and frequently two families—occupies a single room. In short, there may be as many as eight or nine people in one room without any furniture except for two or perhaps three cots which are 80 centimeters wide. Once we came upon just such a room; it contained nine persons, two cots and nothing more, not even a chair, it was completely bare. In every house that we visited, there was only *one* stove for four or five families; furthermore, an entire family was living in the kitchen.
>
> But only the lucky ones are living in these houses; the rest of the workers are still living in barracks and shanties of the tsarist era.[7]

It is not without interest to note that similar conditions were noted by authors writing in the first half of the twenties, that is, more than a decade earlier. Thus Ye. O. Kabo in 1925 wrote that "our investigations show an average of three individuals for each bed."[8] S.G. Strumilin made the same findings in his 1923 survey of the living conditions of Moscow workers and employees.[9]

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new houses separate rooms providing 5 sq. m. per person." *Sovetskoye stroitel'stvo* [Soviet Construction], Moscow, No. 5-6, 1931, p. 149.

[7] *Sotsialisticheskii vestnik* [The Socialist Courier], Paris, No. 5, 1937, p. 15.

[8] Kabo, Ye. O., "Ocherki rabochevo byta" [Sketches of Workers' Life], *Ekonomicheskoye obozreniye*, Moscow, No. 1, 1929, p. 176.

[9] "The most widely used item of bedding in the worker's house-

Chart 8

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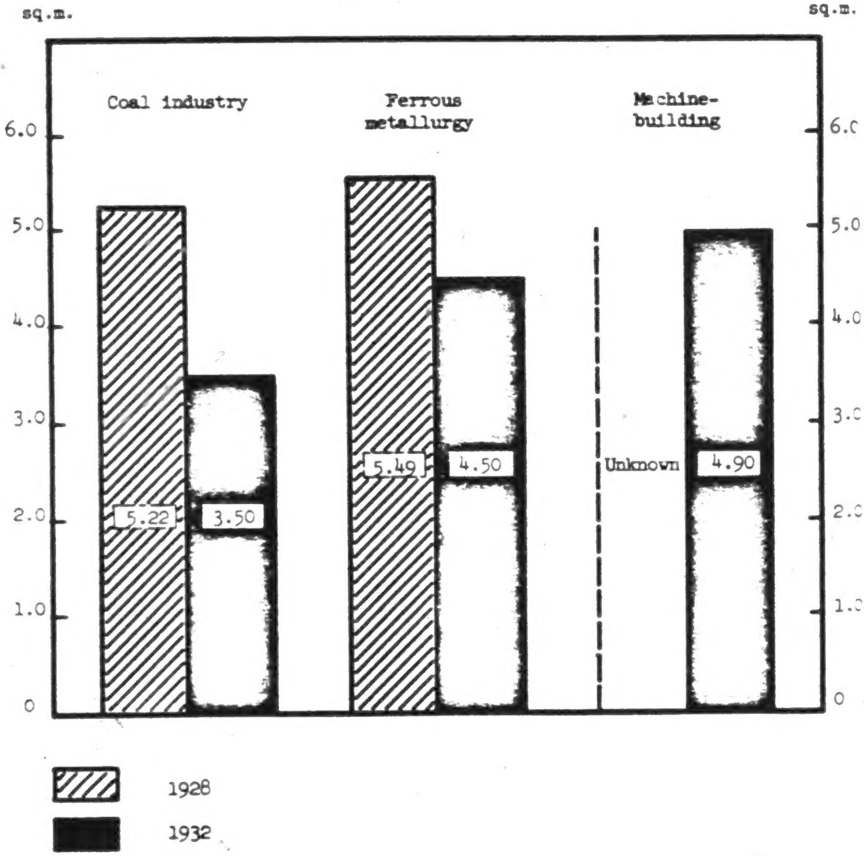
DWELLING SPACE PER WORKER IN BASIC INDUSTRIES IN 1928 AND 1932



Source : See Table 22

31: Sosnovy S-5 (no date) 1954 R1 Soviet Union R1

Chart 9

SIZE OF APARTMENTS OF SCIENTIFIC WORKERS AND SPECIALISTS
IN 1940

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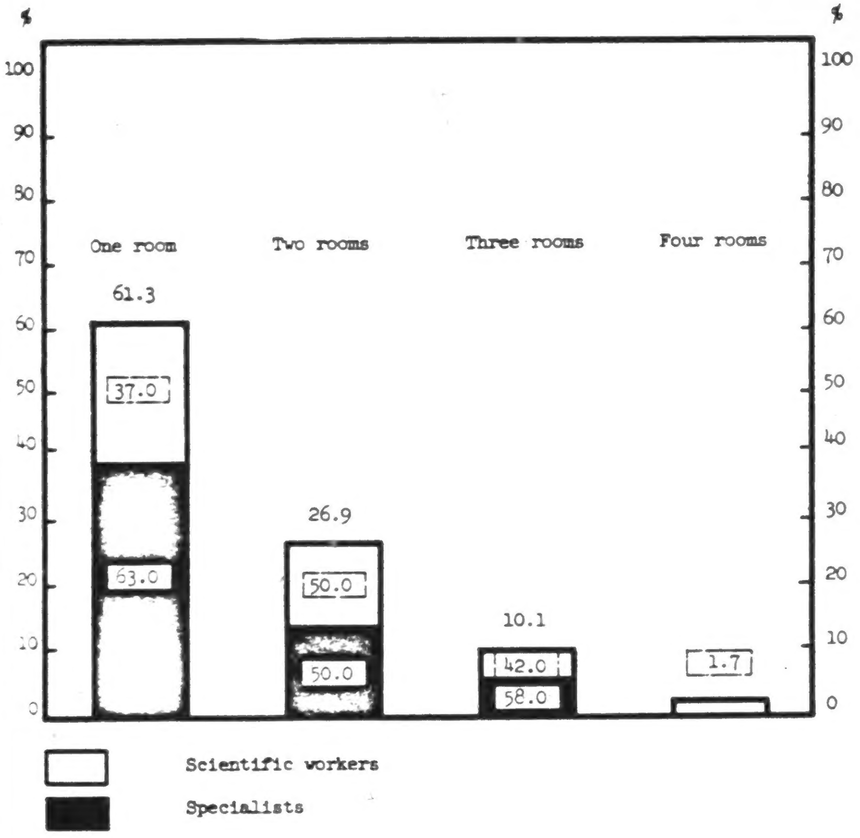

Source : See Table 23

32: Geiger S-4,5 (1950-51) 1955 R1 Soviet Union R1

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TABLE 2. EFFECT OF SOVIET REGIME ON FAMILY FOR PERSONS FROM FAMILIES ON DIFFERENT LEVELS

Occupational Level of Respondent's Family	Effect on Family				
	More Solidary	Unchanged	Less Solidary	Total	N
	Percentages				
Intelligentsia	63	25	12	100	306
Semi-professional and white collar	58	25	17	100	286
Worker	46	23	31	100	382

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121 511 661 Soviet families were likely to be exposed. These were (1) a low standard of living, and (2) the political arrest of someone in the family. Information on the degree of deprivation suffered by the individual in each of these two respects was available. [124] Respondents were asked to estimate the level of their material living conditions in the last years "in comparison with the majority," and were asked to describe in detail both their own difficulties, if any, and those of the members of their families, with the Soviet control apparatus. It was therefore of special interest to explore both the relationship between material living conditions and reported family solidarity, and that between the "arrest history" of the family and its reported state of solidarity.

594 511 124 ●463 As shown in Table 3, where socio-economic level of family is controlled, there is an association between poor material living conditions and reported disruption of family solidarity. Relative living standards were accurately described by respondents, for responses to the check list question on living conditions relative to the majority ("better," "worse," and spontaneously offered write-ins such as "same," or "average") were closely correlated with per capita family income in rubles for the year 1940. Respondents answering "same as those of the majority" or "average," and those who felt their living conditions were above average were combined. On all three social levels, intelligentsia, semi-professional and white collar, and worker, the individuals from relatively deprived families were more likely to report a deterioration in interpersonal solidarity under the Soviet regime than were those from relatively advantaged families.

511 124 This consistently appearing relationship calls for some interpretation. While it can be said that for many Soviet citizens daily life in the U.S.S.R. was reduced in the prewar era to a grim and grinding struggle against abject poverty, this was by no means true of all. Compare, for example, the following excerpts from the interview materials:

> (Respondent is talking about his sister and brother-in-law.) They lived poorly, and I helped them, too. He only earned 350 rubles. He had a bad specialty. It was not considered good. He worked as an unskilled laborer.

32: Geiger S-4, 5 (1950-51) 1955 R1 Soviet Union R1

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511 But on the other hand:

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> I . . . belonged to the category of the "privileged" and highly paid specialists of the Soviet Union, the number of which was small, and therefore economically I was more securely provided for. Furthermore, my assignments made me travel a great deal, and this enabled me to purchase certain items by blat. (This respondent's nominal monthly income in 1940 was 1800 rubles, with a "take home" pay of 1500 rubles.)

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TABLE 3. EFFECT OF SOVIET REGIME ON FAMILY BY MATERIAL LIVING CONDITIONS COMPARED WITH THE MAJORITY FOR DIFFERENT SOCIO-ECONOMIC GROUPS *

Intelligentsia
Effect on Family

Material Living Conditions Relative to the Majority	Less Solidary	Unchanged	More Solidary	Total	N
			Percentages		
Worse	18	24	58	100	55
Same or Better	10	28	62	100	217

Semi-Professional and White Collar
Effect on Family

	Less Solidary	Unchanged	More Solidary	Total	N
Worse	23	17	60	100	109
Same or better	14	32	54	100	142

Worker
Effect on Family

	Less Solidary	Unchanged	More Solidary	Total	N
Worse	39	20	41	100	192
Same or better	26	24	50	100	104

* The relationship shown holds up with a more precise index of the material living conditions of the family, per capita disposable income. This index was obtained from family budgets for the year 1940, which were filled out by about half the sample. See also Table 4, where an additional control is imposed.

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Semi-Professional and White Collar—Material Conditions Worse than Majority

Effect on Family

	More Solidary	Unchanged	Less Solidary	Total	N
One or more repressions	68	26	6	100	31
No serious repressions	38	5	57	100	21

Semi-Professional and White Collar—Material Conditions Same or Better than Majority

Effect on Family

	More Solidary	Unchanged	Less Solidary	Total	N
One or more repressions	67	22	11	100	36
No serious repressions	41	53	6	100	47

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(*Continued on next page*)

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* As noted in the text, the responses appearing in this table are from only those individuals who had not *themselves* suffered serious repression (defined as exile or imprisonment lasting one year or longer) while living in the U.S.S.R. The presence or absence of repressions in the family thus refers only to the experiences of other members of the family.

** When respondents from repressed families are matched in regard to socio-economic level and material living conditions with respondents from families which were not repressed, the former group is significantly more likely ($p < .05$) to choose the example in which family solidarity increased. Similarly, when respondents reporting material conditions as worse than those of the majority are matched on socio-economic level and family repression with those reporting equivalent or better living conditions, the former group is more likely ($p < .05$) to choose the example in which solidarity decreased. Finally, when workers are matched with intelligentsia on the two types of deprivation, the intelligentsia respondents are more likely to choose the solidary example ($p < .10$) and the workers more likely to choose the disrupted example ($p < .05$). With one exception, ethnic group, age, and sex were characteristics found to be unrelated to the responses about the effect of the regime on the family. The exception is the greater tendency of old females to choose the first (more solidary) response.

[1 TABLE 4, PP. 65a & b. --- ANALYST]

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TABLE 4—Continued

Worker—Material Conditions Worse than Majority

Effect on Family

	More Solidary	Unchanged	Less Solidary	Total	N
One or more repressions	41	26	33	100	51
No serious repressions	40	24	36	100	42

Worker—Material Conditions Same or Better than Majority

Effect on Family

	More Solidary	Unchanged	Less Solidary	Total	N
One or more repressions	68	16	16	100	19
No serious repressions	50	17	33	100	24

45: Feldmesser-i S-4, 5(1950-51) 1952 Rl Soviet Union Rl

PROJECT ON THE SOVIET SOCIAL SYSTEM [AF No. 33(038)-12909]
Russian Research Center
Harvard University

October, 1952

THE PERSEVERANCE OF STATUS ADVANTAGES IN SOVIET RUSSIA

by

Robert A. Feldmesser

A Partial Analysis Report Submitted to the Director
Human Resources Research Institute
Air University

185 565 554 One of the major goals of the Bolshevik Revolution was to create a new ruling class, by rooting out the members of the old upper classes and replacing them with workers and peasants and their children. The regime found that the first part of this goal could be accomplished rather easily, and in the early years of its power made an extensive attack on the economic, political, and educational means by which the members of the upper classes had been able to preserve their status. But it found that the replacement of these people was a more difficult problem. Not only is mobility from manual to nonmanual jobs an uncommon phenomenon, because of differences in values among the classes, but the problem was aggravated in Russia by widespread illiteracy.

565 463 554 When data from the pencil-and-paper questionnaire are examined for an indication of the solution of this dilemna, it is observed that only 12% of the respondents' fathers who had been workers or peasants before the Revolution had become nonmanual workers (intelligentsia or employees) after, compared to 86% of those fathers who had been members of the upper classes before. This one-to-seven ratio compares with a one-to-three ratio among a sample of Americans whose occupational careers were studied in 1933-34.

Analysis of the adult male population in 1926 shows that, if anything, the actual ratio was even higher than the one-to-seven that it is in the PPQ sample. Faced with a choice between the idealogical goals of proletarian rule, on the one hand, and efficiency and the maintenance of power, on the other, the regime gave primary emphasis to the latter, and grudgingly permitted the old intelligentsia

and employees to return to their former occupations. At the same 565
time, it established institutions to help workers and peasants move 463
into such occupations, but given the stronger motivation and better 554
preparation of the former upper classes and the limited number of nonmanual occupations available in a society, there was actually little room left for recruits from the lower classes.

[Summary page 2] When the five-year plans began, the situation changed somewhat. The economy was now expanding rapidly, and illiteracy was greatly reduced, so that many more workers and peasants were able to move into nonmanual jobs in the 1930's than had during the 1920's; in the PPQ sample, 30% of the respondents whose fathers had been workers or peasants after the Revolution became nonmanual workers in the 1930's. But the need for nonmanual specialists was so urgent that the regime still could not afford to disqualify the old specialists or their children; indeed, it now removed such disqualifications entirely, enabling the descendants of former nonmanual workers to preserve their fathers' status. Of the respondents whose fathers had been nonmanual workers after the Revolution, 90% were themselves nonmanual workers in the 1930's. Thus, while the new nonmanual group contained, by 1939, a considerable proportion of worker-peasant descendants, it continued to be true that a person of nonmanual descent had a much better chance of attaining nonmanual status than did the person of worker-peasant descent.

47;Rosow S-4,5 (1950-1)1954 R1 Soviet Union R1

EDUCATION OF VARIOUS OCCUPATIONAL GROUPS

Occupational groups	Amount of Education							Totals (N: 100%)
	Adult only	0-4 years	5-7 years	8-9 years	10 years	Some college	Graduated college	
High Managers, High Military	--	(1)	--	(2)	(3)	(2)	(6)	(14)
Sciences, Professions	4%	1%	--%	--%	3%	10%	82%	(131)
Arts, Semi-Professions	3	2	5	6	31	21	32	(160)
White-Collar	5	3	38	15	32	4	3	(192)
Skilled Workers	9	30	32	9	14	4	2	(132)
Semi-skilled Workers	3	46	39	6	4	1	1	(291)
Rank-&-File Workers	5	68	20	5	2	--	--	(100)
Kolkhozniks (collective farm workers)	3	71	21	2	2	*	--	(231)

The above table reveals a high relationship between amount of education and technical skill of the occupation group. The high managers and high military represent a break in the technical skill continuum (although the high military might be classified with the professionals--a departure from customary practice). As the group with the highest managerial responsibility, they could achieve high positions on bases other than technical skill more easily than could other technical specialists. Accordingly, their education could well be lower than other high specialists, as is actually the case.

*Less than 1%

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II. FAMILY SOLIDARITY AND OCCUPATIONAL STRATA

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In the analysis of such a characteristic of the family as its solidarity, it is important to relate the family to other features of the society of which it is a part, and especially to those extra-familial features of the society which directly affect the welfare of the family members. One such aspect of Soviet society in the 1930's was the existence of a far-reaching system of occupational wage differentiation, with attendant variation in style of life, and, in particular, the access of the various occupational strata to the basic life necessities.[4]

It would therefore perhaps not be surprising to find differences in reported family solidarity as between the various Soviet occupational strata. To explore such differences, each of the refugee respondents in the two groups with which we are dealing was classified according to the occupation of the senior male person in the family in which he lived most of his life under the Soviet system, and was placed in one of three occupational categories: Soviet intelligentsia, rank-and-file white-collar employees, or workers.[5] In the case of the 119 members of Soviet intelligentsia families as well as the 140 members of white collar families, 73 per cent reported united families, and only 27 per cent reported disrupted families. For the total of 185 workers a noteworthy contrast was found. In their case the modal pattern was the disrupted family, 53 per cent choosing to say this about their families, and 47 per cent reporting united families.

A difference of this magnitude between urban occupational strata strongly suggests that family solidarity in Soviet urban society varies directly with socio-economic level, at least as between the manual worker and nonmanual worker families. However, as is well known, in an ex post facto analysis of this type, a generalization on the basis of such a relationship is always contingent on the presence of undetected spurious factors. Given the nature of the sample in the present case, it was considered possible that the representatives of working class families were more likely to choose the example of the disrupted family as the best way to blacken a description of the Soviet system, and thus were expressing their strong anti-regime feelings by distorting matters of fact at the expense of their valuation of working class family

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[4] For documentation and a discussion of the general implications of this fact, see Inkeles, Alex, "Social Stratification and Mobility in the Soviet Union: 1940-1950," American Sociological Review, 15, 4, August 1950, pp. 465-479.

[5] The category "intelligentsia" includes such occupations as engineer, army officer, physician, and scientific workers; "white-collar employee" includes bookkeeper, secondary school teacher, clerk, and administrative workers; "worker" refers to all manual occupations.

593 solidarity. But this explanation must be ruled out, for al-
though workers do regularly distort more than the represent-
571 atives of the other two groups, when the tendency to distort
● 463 known facts about the Soviet Union throughout the rest of the
641 questionnaire is controlled,[6] pronounced family solidarity re-
sponse differences between occupational class groups continue
to appear.

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[6] The sample was divided into two groups, those distorting one or more known facts, and those not distorting. "Distorters" were defined as persons answering "no" to one or more of the following questions: Does the present day Soviet citizen have more opportunity to visit the theatre and attend concerts than 30 years ago? Was medical care more accessible when you left the Soviet Union than 25 years ago? Was the production of agricultural machinery higher when you left the Soviet Union than 25 years ago? Do you think that during the last 30 years the number of literate people in the USSR has increased significantly?

593 571 55 most families of the intelligentsia, who got much closer together during moments of hard and severe moral pressure. (Intelligentsia)

593 571 565 463 The two aspects of the life situation of the Soviet urban population discussed above are related to family solidarity in the direction shown for all three of the socio-economic strata dealt with here, although, as will be seen, with considerable inter-stratum differences in the degree of relationship in regard to one of them. Before turning to consideration of the differential impact of extra-familial conditions, however, from Table 4 and Table 5 it will be noted that better material living conditions and arrest with punishment are both more likely to characterize the experience of intelligentsia families than that of the families of the other two groups in the socio-economic hierarchy. Similarly, it is the worker families which were least likely to be in relatively better material living conditions and also least likely to have a family member arrested and punished. Thus, to some degree, it is possible to explain the greater proportion of families reported to be united ones in the intelligentsia and white-collar group families by pointing to the greater incidence there of better conditions and arrest with punishment, two factors found to be positively related to reported family solidarity.

TABLE 4

[511] MATERIAL LIVING CONDITIONS OF FAMILY IN LAST YEARS OF LIFE IN THE SOVIET UNION BY OCCUPATIONAL GROUP LEVEL OF SENIOR MALE IN FAMILY

	Material Living Conditions			
Occupational Group Level	Better than those of the Majority	Worse than those of the Majority	Total	No. of Cases
Intelligentsia	71%	29%	100%	103
White-Collar Employee	50%	50%	100%	117
Worker	31%	69%	100%	156

TABLE 5

ARREST AND SEVERE PUNISHMENT OF ONE OR MORE FAMILY MEMBERS BY OCCUPATIONAL GROUP LEVEL OF SENIOR MALE IN FAMILY

Occupational Group Level	One or More Reported	None Reported	Total	No. of Cases
Intelligentsia	49%	51%	100%	119
White-Collar Employee	46%	54%	100%	140
Worker	40%	60%	100%	185

593 Nevertheless, there are still residual differences left among
the socio-economic groups when material living conditions,
571 arrest history, and tendency to distort are controlled,[8] as
565 shown in Table 6. This fact is of considerable interest to
● 463 students of Soviet social structure, and lends strength to the presumption that there are noticeable sub-cultural differences with respect to the tendency to report family solidarity in the urban population of the Soviet Union. It should be emphasized that this evidence of differential family solidarity among urban occupational strata is independent of the factors shown to be related to reported solidarity, that is, material living conditions, arrest of one or more family members, and tendency to distort known facts about the Soviet Union.

TABLE 6

SOLIDARITY OF OWN FAMILY BY OCCUPATIONAL GROUP LEVEL OF SENIOR MALE IN FAMILY, MATCHED FOR MATERIAL LIVING CONDITIONS OF FAMILY IN LAST YEARS, ARREST AND SEVERE PUNISHMENT OF ONE OR MORE FAMILY MEMBERS, AND TENDENCY TO DISTORT KNOWN FACTS ABOUT THE SOVIET UNION.

	Solidarity of Own Family			
	United	Disrupted	Total	No. of Cases
Occupational Group Level				
Intelligentsia	71%	29%	100%	86
White-Collar Employee	69%	31%	100%	86
Worker	50%	50%	100%	86

The nature of the data at hand made it possible to test further the possibility that intelligentsia and white-collar employee families are more united than worker families. This can be expressed in the form of a proposition of some importance to the sociological study of the family, namely, that the effect on the solidarity structure of the family of a given external circumstance or situation is a function not only of the objective "stimulus" itself, but also depends on the quality of the pre-existing solidarity ties.[9]

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[8] This difference continues to hold up when other attributes, such as age, sex, and nationality, which might act as spurious factors, are controlled.

[9] This is a general conclusion of several studies of the effect of the depression on the solidarity of the family. See for example, Angell, Robert C. The Family Encounters the Depression, New York, 1936; and Komarovsky, Mirra, The Unemployed Man and His Family, New York, 1940.

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If then, it is in fact true that the worker family is one of less solidarity than the upper occupational group families, then it can also be hypothesized that the effect of a given external stimulus will be greater for the worker group than for the more united families of the nonmanual group families. This is to say that the nature of the stimulus or condition itself should be a relatively better predictor of the response which is taken as an index of family solidarity for the worker respondents, while the reverse should be true of the stronger, more united families of the intelligentsia and white-collar respondents. In their case, the nature of the objective stimulus should be less important as a predictor, and the nature of the pre-existing solidarity bonds more important.

This hypothesis was tested by stratifying the relationship between material conditions and family solidarity by the occupational group of the family, shown in Table 7. In the intelligentsia group, of those reporting better material conditions, 73 per cent reported own family unity, and 27 per cent reported disrupted families. Of those reporting worse

TABLE 7

SOLIDARITY OF OWN FAMILY AND MATERIAL LIVING CONDITIONS OF FAMILY IN LAST YEARS BY OCCUPATIONAL GROUP LEVEL OF SENIOR MALE IN FAMILY

Intelligentsia

[571]

Material Living Conditions	Solidarity of Own Family United	Disrupted	Total	No. of Cases
Better	73%	27%	100%	73
Worse	67%	33%	100%	30

White Collar

Material Living Conditions	Solidarity of Own Family United	Disrupted	Total	No. of Cases
Better	81%	19%	100%	58
Worse	66%	34%	100%	59

Worker

Material Living Conditions	Solidarity of Own Family United	Disrupted	Total	No. of Cases
Better	69%	31%	100%	48
Worse	40%	60%	100%	108

593 conditions, 67 per cent also reported united families, and
571 33 per cent disrupted families. This is a small difference,
indicating that material living conditions are to only a small
565 degree related to perception of family solidarity for the in-
463 telligentsia. In the case of the rank-and-file white-collar group, the difference is somewhat more appreciable--15 per cent. Finally, for the workers, the factor of material conditions seems to have such an important influence that the difference is one of 29 per cent, and material conditions seem actually to determine a good part of the direction of the modal response about family solidarity. Of the workers reporting better material conditions, 69 per cent report family solidarity; whereas of those reporting worse conditions, only 40 per cent report united families, and a greater part, 60 per cent, report living in disrupted families. Thus, the original relationship between material conditions and reported family solidarity seen in Table 2 becomes an even greater one for the working-class families, and decreases regularly as the occupational level of the head of the family increases.

In view of the importance of this finding, it was felt desirable to check it with the use of a more precise index of the material welfare of the family. This was done with the use of family budget data, estimated by the respondents for the last normal prewar year, 1940. Results showed that both in terms of the gross income of the chief breadwinner of the family, and in terms of per capita disposable income of the family as a whole, the original relation between material conditions and reported solidarity remained high. In the same way, when the occupational group is held constant, the partial relationships were equivalent or smaller for the white-collar group, much smaller for the intelligentsia, and markedly larger for working-class persons.

To return now to the effect of arrest and subsequent punishment of one or more family members on the functioning of the family, it was found that in contrast to the case of material living conditions, arrest did not have a differential impact on families from the three occupational groups. Rather, representatives from all three groups were almost equally likely to report, in effect, that such a serious tragedy brought the family members closer together instead of separating them. Such a finding does not, of course, support the hypothesis that the impact on family solidarity should be greater for the worker family than for the families classed in the other two occupational groups. If one wishes, however, to insist upon the evidence of differential solidarity cited previously, then the corresponding task consists of a further investigation of the nature of such an experience as arrest and conviction of a member of the family, and leads to analysis of the elements of such a "stimulus condition" in comparison with those of the relatively less severe better or worse material living conditions. Such a discussion is beyond the scope of this report, and therefore it can only be said here that in this way it might be possible to specify the theoretical relevance of such aspects of the stim-

TABLE 8

DELEGATES TO THE 19th PARTY CONGRESS[1]

(by education and profession)

Delegates with a higher education		709
of whom there were:		
Engineers	282	
Teachers	98	
Agronomists, zootechnicians and other agricultural specialists	68	
Economists	18	
Physicians	11	
Lawyers	7	
Delegates with an incompleted higher education		84
Delegates with a secondary education		223
Delegates with an incompleted secondary or elementary education		176
Total		1192

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It should be stressed again that these clusterings are empirically derived. Despite their rational coherence, they were not arrived at on a priori basis, but represent the actual behavior of our respondents. What they mean is that a person who, for example, goes to the movies frequently is likely also to attend the theatre frequently, but is not necessarily likely to read newspapers frequently, or attend lectures or agitation meetings.

There are, of course, relationships between types. For example, a person who is high in exposure to aesthetic media is also very likely to be highly exposed to the mass media. The reverse, however, does not [4] necessarily hold. Many persons are highly exposed to mass media who are not highly exposed to the aesthetic media. Other relationships of this sort exist between these types. However, the study of the interrelationship of these types is a separate task in itself. In this paper we shall restrict ourselves to a discussion of the significance of these types as such.

Variations in Communications Exposure in the Soviet Population

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The impression that one gathers quickly from data on Soviet communications behavior is that of a highly stratified society, in which the differences in exposure between social groups is very marked. The major differences are between educational, occupational and residential groups. Virtually without exception, the more highly educated, those of higher occupational status, and those who live in the city are more highly exposed to all media and to all types of media. Sex and age differences are in general surprisingly small.

Occupational differences in level of exposure to each of the four basic types of media are summarized in Table 1. The percentage of persons with frequent exposure drops very sharply for all types as we proceed from left to right along each of the rows, the magnitude of the drop being approximately 80% in two of the four instances.

The most active communications group is composed of persons employed in the arts. They are relatively low in exposure on only one media type, the personalized official media, this being a reflection of the fact that artists work relatively free of the tight institutional controls that force workers in the applied sciences and professions into attendance at agitation sessions and other official meetings. Other than this [5] they are virtually the highest

20 on all other of the three types. As might be expected, they are
184 in a class by themselves in frequency of attendance to movies and
565 the theatre, with 83 percent indicating frequent exposure to the
●463 official aesthetic media.

In general, we may identify five occupational groups as constituting the most active segment of the Soviet population with respect to communications exposure. They are: arts, applied sciences, professions, semi-professions, and white collar workers. Within this top segment there are a few exceptions. White collar workers, for example, have conspicuously less exposure to personalized official media, with only 22 percent reporting frequent exposure, as compared to 40 percent for semi-professionals, the adjacent group. This difference would seem to be largely accounted for by a difference in frequency of attendance at lectures (40 percent for semi-professionals; 17 percent for white collar workers).

Another break in the overall pattern of communications exposure is the sudden drop in the covert media between the professional and semi-professional group. This difference reflects a sharp change in rates of exposure to all three of the media which make up this type: foreign radio, discussion with friends and rumor. Table 2 shows the drop in exposure (for the professional and semi-professional group) on all three media comprising this type. These differences, it will be seen, are in all instances much more marked than the differences between either of these groups and other adjacent groups. [Table 1 on following page]

50. Rossi & Bauer--7S-4.5 (1950-51)1952 R1 Soviet Union R1

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Page 7.

[6] TABLE 1

Level of Exposure By Occupation of Respondent (4)

4. The respondent's occupation is as of 1940. The totals at the bottom of the Table do not add up to the full sample size since those who had no occupation in 1940 (students, housewives, etc.) or who did not answer the question were omitted from consideration.

Managerial and bureaucratic personnel are distributed within these categories according to the type of work performed. Thus, a technically trained factory manager would fall under "applied science," while a physician who occupied an administrative post in the Ministry of Health would be listed as "professional."

	Occupation								
	Arts	Applied Sciences	Prof.	Semi-Prof.	White Collar	Industrial Skilled	Workers Semi-Sk.	Unsk.	Collective Farmers
High Exposure To Official Mass Media	86%	90%	85%	77%	68%	43%	26%	14%	6%
High Exposure Personalized Official Media (1,2,3)	36%	43%	51%	40%	22%	17%	12%	7%	6%
High Exposure Covert Media	58%	58%	57%	38%	35%	26%	18%	13%	13%
High Exposure to Aesthetic Official Media	83%	48%	50%	51%	44%	32%	26%	12%	5%
100% equals	(77)	(111)	(150)	(220)	(345)	(183)	(395)	(133)	(339)

[7] TABLE 2

Rate of Exposure to Covert Media for Selected Occupational Groups

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	Applied Science	Professional	Semi-Prof.	White Collar
Foreign Radio	19% (105)	18% (105)	10% (202)	10% (310)
Discussion with friends	32% (110)	38% (147)	25% (215)	23% (334)
Rumors	38% (110)	38% (147)	23% (211)	17% (332)

The explanation for differentiation in rate of exposure to non-official media at this particular point in the occupational hierarchy is complex, and to some extent can only be speculated on. To a degree, the drop in listening to foreign radios must be considered a function of the fact that semi-professionals cannot afford radios which will pick up foreign broadcasts. It also probably reflects a narrower horizon of interest. Drop in frequency of discussion and access to rumor is again likely to be multi-determined. To some extent, discussion and reliance on rumor is again likely to be multi-determined. To some extent, discussion and reliance on rumor are characteristic of people "in the know" in the Soviet system, people who have friends in or near positions of power or who have access to covert information. Additionally, our oral interviews suggest that this lower exposure to covert sources is a reflection of lower involvement in the system not only in the sense of having lesser access to loci of power, but also in the sense of being less psychologically involved, i.e. less interested in what is going on, less aggressive in operating outside of official channels, having fewer social contacts. If the above suggestions are correct they would indicate that this break in communications behavior reflects a fundamental division point in the Soviet social system, the point which marks an essential discontinuity in the distribution of people who are actively involved [8] in the system as compared to those whose lives are carried on without such involvement. Paradoxically, it implies also that access and interest in covert media of information is correlated highly with involvement in the system.

With respect to all media, rate of frequent exposure drops regularly as we descend the occupational hierarchy until it reaches its nadir in the collective farmer, who is a person almost isolated from the communications network. The bare statistics enumerated in Table 1

are eloquently supported by our oral interviews with peasants. The 20
collective farmers repeatedly pictured a life of isolation, of con- 184
centration on the immediate problems of living with only the most 565
rudimentary of concern for what went on in the world about them. 463

To the extent that peasants are concerned with what happens they tend to regard the Soviet system as a thing external to themselves in which they have no active part. It is a source of things which may happen to them, but about which they can do nothing positive.

It is interesting to note a slight indication of a relative increase in importance in covert media in the communications behavior of both the unskilled worker and the collective farmer. The statistics presented here are not by themselves a sufficient basis for arriving at this conclusion, even though the peasants do cite covert sources most frequently - 13 percent, as compared to 6, 6, and 5 percent for the other types of media. Our oral interviews, however, again support this picture, and the indications are that while the peasant, and to a lesser extent the unskilled worker, have a very low rate of exposure [9] to any source of information, they are relatively more dependent on rumor and discussion than are the members of other groups. What little information they get seems to come by way of mouth.

Occupational differences in communications behavior may be summarized in these terms: as one descends the occupational hierarchy communications exposure drops sharply. People in the arts, the applied sciences, professional, semi-professional and white-collar categories are, in general, much more engaged in the communications network than are persons in the lower occupational categories. Within this upper group, however, there seems to be one significant difference. The semi-professionals and white-collar workers are appreciably less exposed to covert media, and this may mark a crucial point in the extent to which individuals may be said to be engaged in the Soviet system as such. At the lower end of the scale the unskilled worker, and particularly the collective farmer are markedly isolated from the main stream of communication. To some extent covert media seem to regain their relative importance at this lower level, filling the vacuum created by lack of exposure to the formal official media.

Parenthetically, it should be remarked that some place on the occupational continuum the covert media undergo a change of a qualitative nature. At the upper end of the scale "discussion" and "rumor" tend, in many instances, to be relatively reliable first or

20 second-hand accounts of events and present information or viewpoints
184 which do not get into the official media. On the lower end they tend
565 predominately to be relatively unreliable accounts of unknown origin.
463 They are as much a substitute for as a supplement to official media. Needless to say, [10] at this end of the scale they are in no sense an indication of "involvement" in the system.

TABLE 3

Level of Exposure by Place of Residence

Place of Residence (5)

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5. The classification by place of residence is made according to the answers to the following question: "What kind of place did you spend most of your life in the USSR? Large city, town, village or the country?" The respondent was left to define for himself the meaning of these three categories.

	City	Town	Village
High Exposure to Mass Official Media	69%	50%	19%
High Exposure to Personalized Official Media	31	23	10
High Exposure to Covert Media	40	24	13
High Exposure to Aesthetic Official Media	54	36	11
100% equals	(1232)	(729).	(655)

Educational and residential differences are marked by almost as great variation in communications as are occupational differences. Table 3, for example, shows the relationship between residence and communications exposure for the various types of media. As is seen, the drop in exposure between city, town, and rural areas is almost as dramatic as that between the extremes of the occupational hierarchy.

59: Kulski S-4 (no date)1954 R1 Soviet Union R1

466 half, or five and a half hours. For instance, pharmacists work seven hours,
759 doctors at the hospitals six and a half hours, and doctors who devote their whole time to the reception of patients at the polyclinics and the ambulatories five and a half hours."[40]

5. *Night and overtime work*

466 As a general rule the length of the work time is shortened at night be-
461 tween 10 P.M. and 6 A.M. Accordingly, when an enterprise works on three shifts, the work time of the night shift is reduced from eight to seven hours. However, at the enterprises whose production is of a continuous nature (for instance, power stations) the length of the work time of a night shift is the same as that of a day shift (Article 96 of the Code of Labor Legislation). Also the length of night work remains the same as that of day work in those professions for which the length of the work time is reduced generally because of harmful conditions of work; it remains equally the same for such workers who have been hired expressly by an enterprise or office to work at night (for instance, a night watchman).[41]

461 Remuneration for night work is usually calculated so that the worker is paid
465 for the shortened night work period as he would have been paid for the normal day period. For instance, a worker who should work in daytime the full eight hours is expected to work on a night shift only seven hours, but his pay for either shift is the same.

The supplement for night work is calculated to deprive the worker of the full value of the additional wages for night work. Since most Soviet workers are piece-workers, their wages for night work are calculated as follows: for the seven hours of the night shift they are paid exactly as for the seven hours of the day shift, according to the piece-work tariff (a higher tariff), and to those wages is added the supplement for night work calculated according to the lower time tariff. As a result, they are not paid for seven hours of the night shift, as they would have been paid for the eight hours of the daytime shift, but as they would have been paid, according to the piece-work tariff, for approximately seven and a half hours of day work.[42]

Certain categories of Soviet workers do not receive any supplemental pay for night work. About these cases Soviet commentators maintain the fiction that their supplement for night work is already included in their wages: "The supplement for night work is included in the tariff rates of wages or in the salaries of certain categories of workers. For instance, the day tariff rates of workers occupied on the extraction, drying off or collecting of peat are computed in such a manner that the supplement for night work is included in them."[43]

466 Article 94 of the Code of Labor Legislation established the so-called un-
463 regulated work day for "responsible" political, professional, and State white-collar workers. This means that the length of their work day is not limited to

59: Kulski S-4 (no date)1954 R1 Soviet Union R1

eight hours, but that they are expected to execute their tasks if necessary 466 after the expiration of eight hours. For instance, high administrative, mana- 463 gerial, technical and economic personnel (managers of enterprises, heads of offices, etc.), consulting officers, instructors, judges, procurators, investigation officers, are all included within the category of functionaries with an unregulated work day. But manual workers may be occasionally included within the same category because of the special nature of their work; this is true in particular of chauffeurs and coachmen.[44] One does not need to pity too much the important bureaucrats with unregulated work days because "persons with the unregulated work day are compensated for the extra-time work by higher salaries and supplementary vacation."[45] Although the length of the work day for such people is determined "not by the number of hours, but by the extent of their duties and their work," they are expected to observe at least the normal eight-hour work day obligatory for all officials.[46]

Workers may be ordered by the management of a plant to work after the 466 eight-hour work day if the local trade union agrees to it (this consent is a foregone conclusion in all cases involving the interests of production, because the trade unions are another arm of the State and would never oppose an order justified by urgent needs of the productive process) and if the order concerns one of the cases covered by labor legislation, for example seasonal work which requires a particular intensity of production in a given period of the year. The other cases are enumerated by Article 104 of the Code of Labor Legislation as follows: 1) the execution of work required by the needs of national defense (for instance, to fulfill the State Plan of production of war material within the time-limit assigned by the Plan), or of the sort of work which might prevent a natural calamity (for instance, construction of dykes to prevent spring floods); 2) the execution of work indispensable to avoid interruption in such services as water supply, light, sewers, transportation, the post, telegraph, and telephones; 3) urgent termination of a production process which, if not completed immediately, could entail damage to raw materials or machinery; 4) urgent repairs of machinery whose stoppage would hinder a considerable number of workers.[47] The order to work overtime applies [883] also to juvenile workers at least 16 years old. "A worker has no right to refuse to execute the order of the management concerning overtime work."[48] If he does, he is liable to be prosecuted before courts for a willful absence, and will be punished by a fine which is equivalent to a reduction of wages for up to 25 percent and for a period of time up to six months. The only persons ex- [843] empt from this obligation are "juveniles below age 16, pregnant women, beginning with the fifth month of pregnancy, nursing mothers, and workers affected by tuberculosis in active form."[49] If the management of the factory has not time to secure the agreement of the trade union, its order is nevertheless obligatory for the workers; in such a case the management must only inform the trade union of its order (after its execution).[50]

59: Kulski S-4 (no date)1954 R1 Soviet Union R1

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TABLE VI

TIME REQUIRED FOR DISABILITY PENSIONS

Age	Men	Women	Underground or harmful-to-health occupations
20-22	3 years of work	2 years of work	2 years of work
22-25	4 " " "	3 " " "	3 " " "
25-30	6 " " "	4 " " "	4 " " "
30-35	8 " " "	5 " " "	5 " " "
35-40	10 " " "	7 " " "	6 " " "
40-45	12 " " "	9 " " "	7 " " "
45-50	14 " " "	11 " " "	8 " " "
50-55	16 " " "	13 " " "	10 " " "
55-60	18 " " "	14 " " "	12 " " "
60-	20 " " "	15 " " "	14 " " "

Pensions for totally disabled invalids requiring constant care who have been incapacitated for reasons not connected with their professional work vary between 67 and 69 percent of the last average wages. The exact percentage depends on the branch of industry or the particular occupation of the person concerned. Totally-disabled invalids who do not require constant care get from 47 to 49 percent of their last wages. The partial invalids receive from 33 to 35 percent of former wages. But there is the usual limitation on all pensions, namely that 300 r. is the upper limit of the former wages that is taken into the computation. As a result, a total invalid of the first group may get a basic pension of 207 r., a total invalid of the second group a pension of 147 r., and a partial invalid of 105 r. Total invalids also get supplements for the length of their entire wage-earning career, those supplements being of from 10 to 25 percent of the basic pension. Moreover, non-working city residents get a supplement to their pensions equivalent to 60 r. Adding it all, one gets these optima figures for the highest-possible pensions of the invalids whose disablement is not due to a professional cause: 318.75 for the first group and 243.75 r. for the second group. The partial invalids of the third group receive neither the supplement for the length of service nor the town residents' supplement, because they are expected to be partially employed.

The respective percentages of the last wages apply to various industries [463]
and occupations in the following manner: the highest percentages of 69, 49, and 35 are allocated to persons whose occupation has been underground or harmful to health and to the civil flying personnel; the middle percentages of 68, 48 and 34 apply to the employees of the metallurgical, mechanical-engineering, electric, coal or ore-mining, oil, chemical and rubber industries, and telecommunications and transport; the lowest percentages of 67, 47 and 33 are allocated to the remaining industries, notably the light ones. This dis-

59: Kulski S-4 (no date)1954 R1 Soviet Union R1

Old age insurance - Pensions for surviving dependents and the funeral allowance

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Old people who are not peasants have the right to an old-age pension. All men who have attained age 60 and have been earning their livelihood as State employees for at least 25 years, and all women who have reached age 55 and have worked for the State at least 20 years, have the right to the old age pension, even if they choose to continue to be gainfully occupied. Men and women who have been occupied in underground or unhealthful work acquire the same right at age 50 and after a work record of 20 years, including 10 years in an underground or harmful occupation. The last average wages are taken into account but as usual to the amount of 300 roubles. As the result old-age pensions are calculated in the following manner:

1) For employees of underground or harmful professions the pension should be equal to 60 percent of the last wages. As the maximum figure for wages taken into consideration is 300 r., the best pension is 180 r. All pensions awarded to non-working people residing in cities or workers' settlements being increased by 60 r., the pensions of these pensioners are at the highest, 240 r. 745 463

2) However, "the employees of leading professions or leading shops of certain most important branches of the national economy (coal-mining, metallurgical, chemical, and some other) receive old-age pensions on privileged conditions: after attaining age 50, if they have been employed in such an industry for at least 20 years, their pension amounts to 50 percent of the salary or tariff rate (without any upper limitation)."[48] Old-age pensions of those privileged officials and workers might be any amount as long as they are not higher than 50 percent of their last wages or last salary. The usual general limitation of 300 roubles does not apply. One may better comprehend what Soviet legislation means by leading professions in privileged industries by the following illustration: "For instance, such advantages are granted in the coal-mining industry to workers in underground pits, the mining foremen, the certified engineering-technical, managerial, and some other officials."[49] Privileged treatment is, thus, reserved for hard-working miners, but also for controlling officials of the economic bureaucracy.

3) All other employees of privileged industries (coal-mining, ore-mining, metallurgical, machine construction, electric, oil, chemical, telecommunication, and all types of transport), who have not belonged to the so-called leading professions or to leading shops in their respective industries, receive a pension that is equal to 55 percent of their last salary or wage with the usual limitation to 300 roubles as the maximum of wages taken into consideration. Their old-age pension will be 165 roubles and for those residing in cities or workers' settlements, 225 roubles.

4) All other workers and officials receive an old-age pension equal to 50 percent of their last salary or wage, but the usual limitation of 300 roubles applies. Their usual pension will be 150 roubles, and for those who continue to reside in cities, 210 roubles.

361 369 is somewhat higher than that classified as rural; this is also the case in Kirgizia. In some districts, as in the Moscow Province, Dagestan, the Transcaucasus, and some mining districts, the rural population includes a considerable proportion dependent on other occupations than agriculture, forestry, fishing, and hunting. In general, however, the rural-urban break corresponds roughly to the division between population dependent on agriculture and related occupations and that dependent on industry, mining, trade, transportation, and administration. Persons chiefly dependent on handicrafts and shop industries are divided fairly evenly between urban and rural areas.

2. Occupational Characteristics

162 463 The distribution of the populations of the various regions by occupational class in 1926 is shown in Figure 12 and, in somewhat greater detail, in Table 27. The proportion dependent on industrial occupations of all sorts (manufacturing, mining, construction, railway transportation, and other transportation) was 10 percent or over in only five cases: the Leningrad-Karelia Region (16 percent); the Central Industrial Region (15 percent); and the Ural, Crimean, and

TABLE 27

Percentage Distribution of Population of Regions by Occupational Class: U.S.S.R., December 17, 1926[1]

Division or Region	Class I			Class II				
	Agriculture, Forestry, Fishing	Craft and Shops	Subtotal Class I	Manufacturing, Mining	Construction	Railroad Transport	Other Transport	Subtotal Class II
U.S.S.R.	78.17	3.17	81.34	4.48	.69	1.96	.80	7.93
Belorussian S.S.R.	81.46	3.70	85.16	2.08	.61	1.61	.54	4.84
Ukrainian S.S.R.	77.78	3.64	81.42	5.26	.57	1.86	.67	8.36
Northeastern Region	86.30	1.38	87.68	2.36	.31	1.33	.79	4.79
Leningrad-Karelia Region	60.80	3.02	63.82	10.58	.93	3.07	1.73	16.31
Western Region	85.46	2.03	87.49	3.48	.37	1.41	.24	5.50
Central Industrial Region	66.74	3.77	70.51	10.47	1.15	2.32	1.11	15.05
Central Black Soil Region	88.66	2.01	90.67	1.14	.33	1.85	.10	3.42
Vyatka Region	90.62	1.12	91.74	2.22	.22	.66	.18	3.28
Ural Oblast'	74.92	2.81	77.73	7.56	.69	2.60	.68	11.53
Bashkir A.S.S.R.	87.74	2.40	90.14	1.86	.40	1.05	.45	3.76
Central Volga Region	86.90	1.91	88.81	1.81	.35	1.49	.44	4.09
Lower Volga Region	77.50	4.02	81.52	3.14	.63	1.86	1.37	7.00
Crimean A.S.S.R.	52.41	7.05	59.46	4.51	1.53	1.84	3.71	11.59
North Caucasian Kray	74.08	4.14	78.22	3.55	1.06	2.58	1.05	8.24
Dagestan A.S.S.R.	79.57	5.43	85.00	1.16	.62	1.36	1.12	4.26
Siberian Kray	81.27	2.99	84.26	2.11	.88	2.22	.71	5.92
Buryat-Mongolian A.S.S.R.	85.76	1.86	87.62	.86	.45	1.35	.41	3.07
Yakutsk A.S.S.R.	89.89	2.02	91.91	.51	.27	—	.59	1.37
Far Eastern Kray	67.90	3.78	71.68	2.97	.74	6.11	2.28	12.10
Kazakh A.S.S.R.	89.77	1.47	91.24	.55	.34	.89	.31	2.09
Kirgiz A.S.S.R.	90.00	2.33	92.33	.41	.53	.21	.41	1.56
Uzbek S.S.R.[2]	81.38	5.41	86.79	.90	.65	.95	.64	3.14
Turkmen S.S.R.	83.39	1.79	85.18	.93	.46	3.58	.95	5.92
Transcaucasian S.F.S.R.	79.97	4.21	76.18	3.88	1.03	1.93	1.63	8.47

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TABLE 27 (*Continued*)

Percentage Distribution of Population of Regions by Occupational Class: U.S.S.R., December 17, 1926[1]

Division or Region	Class III						
	Trade and Credit	Public Service	Miscellaneous	No Occupation or Unknown	Unemployed	Military	Subtotal Class III
U.S.S.R.	2.18	2.89	2.18	1.82	1.14	.52	10.73
Belorussian S.S.R.	2.01	2.48	1.62	1.60	.90	1.38	9.99
Ukrainian S.S.R.	2.29	2.54	2.10	1.66	1.13	.50	10.22
Northeastern Region	1.24	2.57	1.10	1.69	.74	.20	7.54
Leningrad-Karelia Region	3.29	5.16	2.94	3.60	3.16	1.71	19.86
Western Region	1.35	2.10	.98	1.37	.62	.59	7.01
Central Industrial Region	3.06	4.29	2.23	2.58	1.82	.46	14.44
Central Black Soil Region	1.23	1.80	.94	1.18	.51	.24	5.90
Vyatka Region	.79	1.80	.79	1.24	.29	.06	4.97
Ural Oblast'	1.81	2.95	2.56	2.33	.95	.14	10.74
Bashkir A.S.S.R.	1.18	1.76	1.67	.96	.44	.08	6.09
Central Volga Region	1.47	2.21	1.14	1.33	.75	.20	7.10
Lower Volga Region	2.30	3.20	2.56	1.93	1.32	.17	11.48
Crimean A.S.S.R.	5.62	7.73	4.91	3.89	4.09	2.72	28.96
North Caucasian Kray	2.62	3.34	3.76	1.84	1.48	.50	13.54
Dagestan A.S.S.R.	2.22	2.18	2.56	2.88	.54	.36	10.74
Siberian Kray	1.69	2.61	2.68	1.61	.89	.34	9.82
Buryat-Mongolian A.S.S.R.	1.36	2.58	1.04	2.44	.65	1.25	9.32
Yakutsk A.S.S.R.	1.17	2.11	1.72	.97	.66	.09	6.72
Far Eastern Kray	2.79	4.42	3.04	2.14	1.96	1.87	16.22
Kazakh A.S.S.R.	1.29	1.54	2.58	.79	.42	.05	6.67
Kirgiz A.S.S.R.	1.61	1.39	1.87	.60	.44	.19	6.10
Uzbek S.S.R.[2]	2.73	2.20	2.75	1.15	.55	.68	10.06
Turkmen S.S.R.	2.02	2.32	.71	1.77	.49	1.58	8.89
Trancaucasian S.F.S.R.	3.47	3.92	3.50	2.41	1.12	.94	15.36

[1] Data from census, adjusted by proportional distribution of children under 10 reported as occupied but not otherwise specified. For a discussion of data available on the occupational distribution of the population, see Appendix V.

[2] Including the Tadzhik A.S.S.R.

the Soviet Far Eastern regions (each about 12 percent). The proportion dependent directly on manufacturing and mining was above 10 percent in only two cases: the Leningrad-Karelia and the Central Industrial regions; the Ural District came next with 8 percent. Manufacturing and mining supported 5 percent of the population in the Ukraine, 4.5 percent in the Crimea, 4 percent in the Transcaucasus, about 3.5 percent in the North Caucasus and in the Western Region, and about 3 percent in the Lower Volga Region and in the Far Eastern Territory. In all other major regions less than 3 percent of the population was dependent on manufacturing and mining. The proportion dependent on employment in transportation was highest in the Far Eastern Territory (8.4 percent), the Crimea (5.6 percent), and the Leningrad-Karelia Region (4.8 percent).

The occupational structure of the Crimea is most complex. This region had the lowest proportion of total population dependent on agriculture, forestry, or fishing (52 percent), although it contains some of the richest farm land in the Soviet Union. The proportion of persons *primarily* dependent on handicrafts and shop industries was unusually high in the Crimea (7 percent). Incidentally, a somewhat similar situation is indicated for several other regions with a large non-Russian population; the comparable proportion was as high as 5 percent in Uzbekistan (Central Asia) and Dagestan (a hill region northeast of the Caucasus Mountains) and 4 percent in the Transcaucasus, North Caucasus, and Lower Volga regions. The Crimea also showed higher than average proportions dependent on manufacturing and mining, construction, non-railway transportation, trade and credit, public service (influenced in this case by a greater proportion of city dwellers and many sanitoria), "miscellaneous" (independent professional, casual labor, and domestic service), no occupation or occupation unknown, unemployed, and military personnel. In the Crimea 29 percent of the total population fell in classes other than agriculture or industry: i.e., in the trade, service, miscellaneous, unemployed, and military groups. Elsewhere, the nearest approach to such complexity of the occupational pattern, as indicated by the proportion of the population not classified as immediately dependent on either agriculture or industry, is found in the Leningrad-Karelia Region (20 percent), the Far Eastern Territory (16 percent), the Transcaucasus (15 percent), and the Central Industrial and the North Caucasus regions (14 percent).

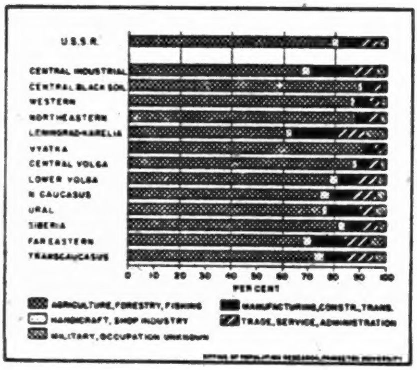

FIGURE 12. Percentage Distribution of Population of Specified Regions by Occupational Class: U.S.S.R., December 17, 1926 [Table 27]

The proportions dependent on the traditional peasant or pastoral occupations (agriculture, forestry, fishing, and handicrafts and shop industry) in various parts of the Soviet Union in 1926 ran as follows:

1. Under 65 percent	Crimea, Leningrad-Karelia
2. 65-74 percent	Central Industrial, Far Eastern
3. 75-79 percent	Transcaucasus, North Caucasus, Ural
4. 80-84 percent	Ukraine, Lower Volga, Siberia
5. 85 percent or over	Belorussia, Northeast, Western, Central Black Soil, Vyatka, Bashkiria, Central Volga, Dagestan, Buryat-Mongolia, Yakutia, Kazakhstan, Kirgizia, Uzbekistan, Turkmenia

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According to the 1926 census data presented in Table 37, employed persons (i.e., "workers" and "employees"—the latter term referring to clerical, professional, technical and related occupational classes) constituted only 11 percent of the potential labor force ("active popula-

TABLE 37

Number of All Occupied Persons in the U.S.S.R., 1926; Number of Employed Persons, 1926, 1930, and 1939[1]

(Numbers in Thousands)

[463]

Occupation	Total "Active Population" 12/17/1926	Employed Personnel			
		12/17/1926	1926-1927	1930	Estimated 1/17/1939
Total	86,220[2]	9,583[3]	10,944	14,531	28,539[4]
All Civilian Occupations	82,713	—	—	—	—
Agriculture and Related Occupations	71,735	1,202	2,078	2,208	3,935
Agriculture	—	—	—	1,552	2,535
Forestry	—	—	—	611	1,300
Fishing	—	—	—	45	100
Handicrafts and Shop Industry	1,866	301	423	290	400
Manufacturing, Mining, Construction, Transport, and Trade	5,606	4,734	5,338	8,482	16,955
Manufacturing and Mining	2,792	2,790	2,839	4,264	9,135
Construction	364	147	547	1,623	1,963
Railways	890	890	1,006	1,084	1,570
Other Transport	403	229	296	415	1,486
Trade and Credit	1,157	678	650	1,096	2,801
Public Administration and Social Service (including Communication)	2,030	1,893	2,400	3,152	6,932
Communication	—	—	95	153	414
Education (including Art)	—	—	715	921	2,623
Health	—	—	365	477	1,267
Municipal Service	—	—	105	131	805
Administration	—	—	1,120	1,470	1,823
Independent Professional	137	—	—	—	—
Casual Labor, Domestic Service, etc.	1,476	1,453	705	399	317
Other "Active"	3,507	—	—	—	—
Pensioners; No Occupation; Unknown	1,862	—	—	—	—
Unemployed	1,014	—	—	—	—
Military	631	—	—	—	—

[1] See Appendix V for description of sources and adjustments, and data for intervening years.

[2] All gainfully occupied persons, including peasants, members of cooperatives, etc., exclusive of children under 10 years of age, reported as gainfully occupied but not otherwise classified.

[3] Workers and employees according to census, December 17, 1926. The figures in all later columns are based on employment statistics.

[4] Figures interpolated between 1937 and 1942 estimates. The total employment figure interpolated between the 1937 and the 1940 estimates is 28,747,000.

livestock resources. An intensive campaign for the production of food crops in 1933 was rewarded with a good grain harvest, and the agricultural situation was stabilized thereafter. This crisis had far-reaching effects, including, as we shall see in a later chapter, an apparent interruption of population increase. 241 433

3. *Distribution of Population by Occupational Class, 1926 and 1939*

It is difficult to make an exact estimate of the change in farm population or of the number of persons in various economic classes from 1926 to 1939. According to the 1926 census, the population dependent on agriculture, forestry, and fishing was 114,056,000 persons, including 2,128,000 persons dependent on wage or salaried work in agriculture, forestry, and fishing. This was 78 percent of the total population. Two methods of estimating the farm population in 1939, similarly defined, are described in Appendix V.[1] On one method (Assumption A), the figure obtained for January, 1939, is 97,117,000 persons, i.e., 57 percent of the total population. This may be accepted as a maximum, or very nearly a maximum, figure. An alternative method (Assumption B) gives 91,751,000 persons, i.e., 54 percent of the total population. This, in turn, may be accepted as very close to the minimum possible figure. Conversely, the population dependent on manufacturing, mining, construction, transportation, and trade rose from 14.7 million persons (10 percent of the total) to an estimated 40.9-44.9 million persons (24-26 percent of the total); persons dependent on public administration and social services rose from 4.6 million (3 percent of the total) to 16.8-18.4 million (about 10 percent of the total). There was an apparent increase in the population primarily dependent on "handicrafts and shop industries," presumably owing to the transfer of such activities from households to specialized cooperative or private enterprises. These distributions are shown in Table 40 and Figure 16. 162 463

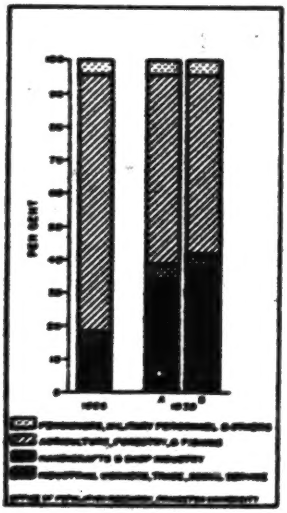

FIGURE 16. Estimated Distribution of the Soviet Population by Broad Occupational Class, 1926 and 1939 [Table 40]

[1] [Cf. p. 218ff.--Analyst]

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TABLE 40

Estimated Distribution of the Soviet Population by Broad Occupational Class, 1926 and 1939[1]

Occupational Class	1926		1939 (Estimated)			
			Method A		Method B	
	Number (In thousands)	Percent	Number (In thousands)	Percent	Number (In thousands)	Percent
Total	147,028	100	170,467	100	170,467	100
Agriculture, Forestry, and Fishing	114,056	77.6	97,117	57.0	91,751	53.8
Collective and Private Sectors	111,928	76.1	87,634	51.4	81,332	47.7
Employed Personnel	2,128	1.5	9,483	5.6	10,419	6.1
Handicrafts and Shop Industry	4,632	3.2	7,791	4.6	7,395	4.3
Collective and Private Sectors	3,970	2.7	6,827	4.0	6,336	3.7
Employed Personnel	662	0.5	964	0.6	1,059	0.6
Industry, Trade, and Social Service	22,130	15.0	58,400	34.3	64,162	37.6
Manufacturing, Mining, Construction, Transport, and Trade	14,729	10.0	40,862	24.0	44,894	26.3
Public Administration and Social Services (plus Independent Professional, 1926, and "Non-worker," 1939)	4,588	3.1	16,774	9.9	18,429	10.8
Casual Labor, Domestic Service	2,813	1.9	764	0.4	839	0.5
Pensioners, Military Personnel, Unknown (plus Unemployed and Children Under 10 Years Reported as Gainfully Employed, 1926)	6,210	4.2	7,159	4.2	7,159	4.2

[1] For sources and discussion of alternative estimates for 1939, see Appendix V. Percentages for 1926 differ from those presented in Table 27 because the latter were adjusted by proportional distribution of children under 10 years reported as gainfully employed but not otherwise specified.

4. *Changes in Farm Population, Livestock, and Sown Land*

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There was a decrease between 1926 and 1939, not only in the proportion of the Soviet population dependent on agriculture, but in the absolute size of the farm population. This is certain, although the exact amount of the decrease cannot be stated with any confidence. Nevertheless, during the same period there was an absolute increase in the extent of land under cultivation.[4] The acreage in grains increased 11 percent during the period 1928-1938, with most of the in-

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[4] The agricultural situation did not change much between 1926 and 1928. Data for the years 1928-1938 are used for analysis of trend in sown area during the intercensus period. (See Table 41.)

TABLE A 10

Trend of the Employed Labor Force: U.S.S.R., 1926-1939
(Numbers in Thousands)

Occupation	Total "Active" Population 12/17/1926	Employed Personnel (Workers and Employees) 12/17/1926	1926-1927	1928
Total	86,220[1]	9,583[2]	10,944	11,599
All Civilian Occupations	82,713	—	—	—
Agriculture and Related Occupations	71,735	1,202	2,078	2,037
Agriculture	—	—	—	1,676
Forestry	—	—	—	331
Fishing	—	—	—	30
Handicrafts and Shop Industry	1,866	301	423	408
Manufacturing, Mining, Construction, Transport, and Trade	5,606	4,734	5,338	5,771
Manufacturing and Mining	2,792	2,790	2,839	3,096
Construction	364	147	547	723
Railways	890	890	1,006	971
Other Transport	403	229	296	299
Trade and Credit	1,157	678	650	682
Public Administration and Social Service (including Communication)	2,030	1,893	2,400	2,574
Communication	—	—	95	95
Education (including Art)	—	—	715	789
Health	—	—	365	399
Municipal Service	—	—	105	117
Administration	—	—	1,120	1,174
Independent Professional	137	—	—	—
Casual Labor, Domestic Service, etc.	1,476	1,453	705	809
Other "Active"	3,507	—	—	—
Pensioners; No Occupation; Unknown	1,862	—	—	—
Unemployed	1,014	—	—	—
Military	631	—	—	—

forestry, fishing, and handicrafts and shop industry (i.e., reported figures for 1935). Minor differences in classification of construction and transportation are ignored and the reported figures are used without adjustment.

The figures for January 17, 1939, are interpolated between the figures for 1937 and 1942 (1937 *plus* .3092 x difference) with an alternative interpolation for the total number, using the 1940 estimate (see notes 3 and 4 of Table A 10).

According to the employment statistics the average number of workers and employees during 1926-1927 was 10,944,000. This figure is 14.2 percent above the corresponding census figure of 9,583,000 for December 17, 1926. The figures have a somewhat different time reference, but this is probably a minor source of difference. As might be expected, the greatest discrepancies appear in construction, agriculture and related occupations (employed personnel), and handicrafts. The employment figure for agriculture and related activities is 73 percent above the corresponding census figure (a difference of 876,000 persons) and that for handicraft and shop industries is 41 percent

APPENDIX V

NOTES ON THE EMPLOYED LABOR FORCE AND ECONOMIC CLASSES IN THE SOVIET UNION, 1926-1939

463 Data are available on the distribution of the population by occupation and family status at the time of the census, December 17, 1926. There are also current statistics on employment for the period 1926-1937, an estimate of total employment in 1940, a forecast of planned development for 1937-1942, and certain "social classifications" of the population of the Soviet Union for 1937 and 1939.

The 1926-census data are based on a classification of all persons according to "usual occupation" or family status in relation to gainfully occupied persons. Employed personnel in the Soviet Union refers to two classes: "workers" and "employees." The latter term includes clerical and professional employees and some types of technical and service workers. All others are classified as "workers." The category here referred to as "handicrafts and shop industry" is designated "small household and handicraft industry" in the census (melkaya i kustarno-remeslennaya promyshlennost). It includes weaving, spinning, and sewing; garment, boot, and harness shops; builders, blacksmiths, tinsmiths, jewelers, bakers, barbers, et cetera. The category "agriculture, forestry, and fishing" also apparently includes some handicraft workers, as is shown by the detailed classification of workers and employees in this group. The classification scheme obviously reflects the primitive, unspecialized character of much of the economic activity of the Soviet population at this time.

Various sources follow somewhat different schemes in the classification of workers by industry, so that some adjustment is necessary to give comparable results. The division between "large-scale industry" (roughly comparable to manufactures and mining in the 1926 census classification) and "small industry" (roughly comparable to handicrafts and shop industries in the 1926 census) is dropped for 1937 and later years; the single figure for "industry" thereafter also includes part of the labor force previously classed under forestry, construction, and transportation, although these categories are retained with restricted application.[1] Therefore some adjustment is necessary in order to give comparable figures on the employed labor force by major industrial groups for the whole intercensus period, 1926-1939. These adjustments do not affect the figures on total employment. They are made only to give some indication of trend by major groups. The results are presented in Table A 10.

The sources and adjustments are as follows:

Data for December 17, 1926, are from the census, Volume 34, giving classification by "principal occupation."

Data for 1926-1927 through 1935 are from *Trud v SSSR, 1935*, Title 448, pp. 10-11. (Compare *Sotsialisticheskoye Stroitel'stvo, 1935*, Title 409, pp. 308-309, and *1936*, pp. 508-[illegible].) These data refer to average annual volume of labor, as reported by industries. "Large industry" in these tables is assumed to be equivalent to manufacturing and mining in the census classification. "Small industry" is assumed to be equivalent to handicrafts and shop industry in the census classification. Communication is transferred to public service ("institutions") to conform to the census classification.

Data for [illegible] and planned figures for 1942 are from *Tretiy Pyatiletniy Plan*, Title 461, pp. 228-229. The new [illegible] scheme used in this source differs from that used in 1926-1927 through 1935. The new [illegible] is also used in *Sotsialisticheskoye Stroitel'stvo, 1933-1938*, Title 410, p. 138, which gives data for 1932, making possible a comparison and partial adjustment of the two schemes. The figures [illegible] conform to the earlier scheme, so far as possible. Figures for forestry, fishing [illegible] forward from 1935. In the later sources giving data for 1932, 1937, [illegible] "industry" includes workers in forestry, fishing, and handicrafts and shop industries except for a specific part of the forestry group which is separately reported (100,000 in [illegible] 325,000 in 1942). "Manufacturing and mining," therefore, is here estimated as [illegible] (specific part) *minus* the estimated total number in

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[1] Compare [illegible] *Sotsialisticheskoye Stroitel'stvo, 1935*, Title 409, and *Ibid., 1933-1938*. Title 410. The chan[illegible] but less important as regards construction and transportation.

TABLE A 10 (*Continued*)

Trend of the Employed Labor Force: U.S.S.R., 1926-1939
(Numbers in Thousands)

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Occupation	Employed Personnel (Workers and Employees) 1930	1932	1933	1934	1935
Total	14,531	22,943	22,325	23,681	24,770
All Civilian Occupations	—	—	—	—	—
Agriculture and Related Occupations	2,208	4,097	4,123	4,414	4,374
Agriculture	1,552	2,858	2,819	3,094	2,974
Forestry	611	1,140	1,193	1,209	1,300
Fishing	45	99	111	111	100
Handicrafts and Shop Industry	290	248	327	348	401
Manufacturing, Mining, Construction, Transport, and Trade	8,482	13,884	12,933	13,849	14,479
Manufacturing and Mining	4,264	6,481	6,229	6,531	7,066
Construction	1,623	3,126	2,361	2,618	2,204
Railways	1,084	1,527	1,474	1,603	1,789
Other Transport	415	696	831	952	1,133
Trade and Credit	1,096	2,054	2,038	2,145	2,287
Public Administration and Social Service (including Communication)	3,152	4,373	4,526	4,660	5,122
Communication	153	224	257	295	334
Education (including Art)	921	1,347	1,463	1,568	1,725
Health	477	647	681	739	809
Municipal Service	131	237	373	378	509
Administration	1,470	1,918	1,752	1,680	1,745
Independent Professional	—	—	—	—	—
Casual Labor, Domestic Service, etc.	399	341	416	410	394
Other "Active"	—	—	—	—	—
Pensioners; No Occupation; Unknown	—	—	—	—	—
Unemployed	—	—	—	—	—
Military	—	—	—	—	—

464 above the census figure (a difference of 122,000 persons). These differences are consistent with the large amount of seasonal employment characteristic of Russian economy, especially in rural industries. According to the 1926 census, 5,425,000 persons, chiefly resident in rural areas, reported secondary occupations, of whom 2,047,000 gave agriculture or related activities and 1,804,000 listed handicrafts and shop industry as the chief source of supplementary income. The industrial employment figure for manufacturing and mining is only 2 percent above the corresponding census figure.

472 The handicraft and shop industry class represents a heterogeneous group including traditional handicrafts, small weaving establishments, et cetera. (Forestry and fishing cooperatives are apparently included in this category in the later "social classifications" of 1937 and 1939.) The trend of this group is difficult to interpret. Apparently it reflects two tendencies, which are phases of the same general development but which have opposite effects on the classification of persons in this category: (1) the transfer of economic activities from the traditional handicraft field to manufacturing and mechanical industries, and (2) the transfer of supplementary lines of peasant activity into more highly organized cooperative enterprises, owing to greater specialization in agriculture.

TABLE A 10 (*Continued*)

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Trend of the Employed Labor Force: U.S.S.R., 1926-1939
(Numbers in Thousands)

Occupation	Employed Personnel (Workers and Employees) 1937	1940	Planned 1942	Estimated 1/17/1939
Total	26,989	30,400[3]	32 000	28,539[4]
All Civilian Occupations	—	—	—	—
Agriculture and Related Occupations	3,883	—	4,050	3,935
Agriculture	2,483	—	2,650	2,535
Forestry	1,300	—	1,300	1,300
Fishing	100	—	100	100
Handicrafts and Shop Industry	400	—	400	400
Manufacturing, Mining, Construction, Transport, and Trade	15,950	—	19,200	16,955
Manufacturing and Mining	8,561	—	10,416	9,135
Construction	2,023	—	1,820	1,963
Railways	1,512	—	1,700	1,570
Other Transport	1,272	—	1,965	1,486
Trade and Credit	2,582	—	3,290	2,801
Public Administration and Social Service (including Communication)	6,415	—	8,085	6,932
Communication	375	—	500	414
Education (including Art)	2,425	—	3,065	2,623
Health	1,118	—	1,600	1,267
Municipal Service	754	—	920	805
Administration	1,743	—	2,000	1,823
Independent Professional	—	—	—	—
Casual Labor, Domestic Service, etc.	341	—	265	317
Other "Active"	—	—	—	—
Pensioners; No Occupation; Unknown	—	—	—	—
Unemployed	—	—	—	—
Military	—	—	—	—

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[1] All gainfully occupied persons, including peasants, members of cooperatives, etc. The census data on gainful workers (first two columns) are exclusive of 1,134,000 children, under 10 years of age, reported as gainfully occupied but not otherwise classified.

[2] Workers and employees according to the census, December 17, 1926. The figures in all later columns are based on employment statistics (see text for sources).

[3] Voznesenskiy, *Pravda*, February 19, 1941.

[4] Figures interpolated between 1937 and 1942 estimates. The total employment figure interpolated between the 1937 and the 1940 estimates is 28,747,000.

The most significant division within Soviet economy is that between (I) agriculture, forestry, fishing, and handicrafts and shop industry, and (II) manufacturing, mining, construction, transportation, trade, and public service. The trend of personnel in the latter division (Group II) is shown with approximate accuracy by the employment statistics from 1928 through 1939. Other data must be used to study the trend in the first of these broad divisions (Group I). The use of employment data alone (in contrast to census data) gives a slightly exaggerated picture of the expansion in 471 464

TABLE A 15

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Estimated Population (Including Family Dependents) in Principal Occupational Classes in the Soviet Union, January 17, 1939[1]

Occupational Class	Total Population Number	Total Population Percent	Expected Urban Population
Total	170,467,186	100	56,592,000[2]
Agriculture and Related Occupations	90,815,000	53.3	2,361,000[3]
Collective Farm Group	76,045,000	—	—
Private Farm Group	5,287,000	—	—
Worker-Employee Group in Agriculture	6,109,000	—	—
Worker-Employee Group in Forestry and Fishing	3,374,000	—	—
Handicrafts and Shop Industry	7,300,000	4.3	4,278,000[4]
Cooperative Group	3,904,000	—	—
Private Group	2,432,000	—	—
Worker-Employee Group	964,000	—	—
Industry, Trade, and Social Service	58,400,000	34.3	45,377,000[5]
Manufacturing, Mining, Construction, Transport, and Trade	40,862,000	—	—
Public Service	16,706,000	—	—
"Non-worker"	68,000	—	—
Casual Labor and Domestic Service	764,000	—	—
Miscellaneous	7,159,000	4.2	2,348,000[6]
"Social Group Not Indicated"	1,244,000	0.7	—
Pensioners, Military Personnel, etc.	5,915,000	3.5	—
Unaccounted (Total Population Minus Estimated Population in Specified Class)	6,793,000	4.0	2,228,000[6]

[1] Figures, unless otherwise indicated, are taken or derived from Tables A 11 and A 14.
[2] Urban population according to census of January 17, 1939, was 55,909,908.
[3] Applying proportion according to census, 1926 (.026).
[4] Applying proportion according to census, 1926 (.586).
[5] Applying proportion from *Trud, 1935*, pp. 26-27 (.777).
[6] Applying proportion of total population, 1939 (.328).

disinterested assistance which they have rendered and continue to 563 render in the development of the economy and culture of our republic . . ."[10] This "declaration" is especially revealing since it was made by a representative of the Yakuts, who are known even among the northern nationalities as the most determined nationalists.

The economy of the native nationalities of the North has three 463 main branches: fur trade, reindeer breeding, and fishing. The first 228 two branches are of nation-wide significance, while the fish are used only for local consumption.[11] Just before the war, however, certain measures undertaken by the Main Administration of the Northern Sea Route and by the Ministry of Fishing resulted in some commodity production. The lower reaches of the Yenisei River, for example, annually yielded 18,000–25,000 centners of fish for sale. On Novaya Zemlya, in 1937, 4,000 centners of fish were delivered to commercial organizations.[12] During World War II, the difficult food situation in the country forced an increase in the procurement of fish from Siberian rivers, particularly in the northern regions.[13] All this, however, did not materially alter the situation: the quantity of fish which goes to the northern industrial population is insignificant, and its receipt is conditional on bringing in a labor force from outside. The fish production of the local nationalities is intended primarily for their own food needs. For various technical and economic reasons, a significant change in this situation cannot be expected in the near future.

The situation is entirely different as regards the fur trade and 224 reindeer breeding. The fur trade has long played an important role in the financial resources of the Russian Government. In times of monetary difficulties, Peter I used to issue a famous order: "Put pressure on the *jasašnye*."[14] Uncontrolled hunting methods eventually resulted in a severe depletion of the northern fur resources. In the eighteenth century, Samoilov, the Yeniseisk deputy to the Legislative Commission under Catherine II, referred to fur as a basic article of trade.[15] By the middle of the nineteenth century, the

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[10] "Zasedanija Verkhovnogo Soveta SSSR. V Sovete Nacional'nostej. Reč' deputata S. Z. Borisova. Njurbinskij izbiratel'nyj okrug, Jakutskaja ASSR," *Pravda*, No. 170 (11642), July 19, 1950.

[11] Much the same applies to the hunting of sea animals along the coasts of the White Sea and the Barents Sea.

[12] *Kursy politupravlenija, op. cit.*, p. 27. A centner equals 110.23 lb. avoirdupois.

[13] V. I. Kurskij, *Ryby v prirode i khozjajstve čeloveka* (Moscow, 1949), p. 120.

[14] The northern nationalities were obliged to pay the "jasak" (taxes) in fur, and for this reason received the name "jasašnye."

[15] See N. M. Jadrincev, *Sibir' kak kolonija*, 2nd ed. (St. Petersburg, 1892), p. 335.

68: Cressey K-4 (no date) 1954 R1 Soviet Union R1

[Leningrad]

Few cities have a poorer site, or a better general location. The 361
delta of the Neva River is so swampy that thousands of workmen lost their lives in constructing Peter's new capital. All large buildings rest on piles, for the ground is too soft for normal foundations. There are so many canals and distributaries in the Neva delta that the city needs 500 bridges.

The city lies close to sea level, and part of it is inundated when the river is in flood, or when west winds pile up water in the shallow Gulf of Finland. The river is frozen from mid-November till early April. Although four-hundred miles north of Moscow, winter temperatures are 5°F. warmer because of the nearness to the sea. Leningrad lies two thirds of the way from the equator to the pole, so that during the long summer evenings there is enough light to read a newspaper at midnight. Twilight merges into dawn, for the sun barely sinks below the northern horizon. People walk the streets till well after midnight. Winter days are correspondingly short and cold. It is dark until 10 a.m. and after 3 p.m. Two hundred days a year have rain or snow.

If the city is handicapped by its immediate site, it profits from its regional setting. Sea lanes lead to Scandinavia, Germany, and the Atlantic. The Neva provides water links via the Mariinsk Canal system to the headwaters of the Volga, and also to the Dnieper; and via the Baltic-White Sea Canal to the Arctic. These, and the land routes which have long focused on the city, made Czarist St. Petersburg the natural outlet for the northern half of European Russia, the Urals, Central Asia, and even Siberia.

Since St. Petersburg was both the chief seaport and the seat of government, here was where foreign concerns established warehouses and sought business concessions. Specialized domestic industry was dependent on machinery and supplies which were only available here. As import and export business grew, St. Petersburg developed assembly plants and factories. As a result, [463] ●
this was the first city to have skilled mechanics for making typewriters, electrical apparatus, textile machinery, chemicals, and machine tools. This skill has become traditional, and today no city in the Union can duplicate Leningrad's reservoir of highly specialized workers. Leningrad trade-marks rank high all across the country.

It was not an accident that the Revolution of 1917 took place in Leningrad. It is not merely because this was the capital; Marxism

× 874 Thus the requirements for entrance examinations which were made compulsory in 1936 are not likely to be relinquished, at the present time at least. And although there are some signs of relaxation of standards in the upper grades of the secondary school, as was already mentioned in chapter II, so far there are no signs of the relaxation of selection procedures by higher educational establishments.

Specialization in Soviet Higher Education

● 463 × 874 The Soviet term "specialization" has a considerably narrower meaning than it has in American professional education. In the Soviet Union, "specialization" in professional education means such modification of a training program as to give an individual preparation in a certain, narrowly defined field of knowledge.

Soviet sources distinguish several levels of aggregations of professions by the field of their specialization. As of 1953–54 the pattern of specialization in Soviet professional education and the respective levels of aggregation can be described as follows:[30]

1. Soviet higher education is divided into five areas or branches (*otrasl'*). These are: (1) engineering-industrial; (2) agricultural; (3) socioeconomic; (4) educational; (5) health. These are the categories which will be dealt with extensively throughout this volume.
2. These five areas are composed of a total of 24 specialty groups or fields (*grupovaya spetsial'nost'*). To some extent, these groups resemble the demarcation lines made for American professional education by field of study. There are, for example, such specialty groups as civil engineering, chemical engineering, metallurgy, medicine, etc.
3. These 24 specialty groups or fields represent an aggregate of 295 specialties (*spetsial'nost'*). For instance, power engineering as a specialty group has eight specialties, among which, for example, are power generating, transmission networks, etc. Metallurgy as a specialty group has 10 specialties, some of which are nonferrous metals metallurgy, blast furnaces, and rolling technology. In the specialty group medicine there are seven specialties, i. e., general practice, pediatrics, hygiene, pharmacy, etc. Chemical engineering as a specialty group has 16 specialties, such as heavy chemicals technology, silicate technology, etc.
4. Some of these 295 specialties are further divided into specializations (*spetsializatsiya*). There are about 450 specializations, of

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[30] I. Lyasnikov, *Podgotovka spetsialistov promyshlennosti SSSR* (Training of Specialists for Industry in the U. S. S. R.), Moscow, 1954, 89. See also *VVSh*, No. 5, 1954, 48; No. 9, 1954, 6.

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which institutes account for 388 and universities for 62. In the specialty nonferrous metals metallurgy, for example, there are 11 specializations, including copper and alloys metallurgy, precious metals refining and metallurgy, etc. In power generating as a specialty, there are specializations in large hydroelectric power stations, industrial plant power stations, etc. In medical general practice as a specialty, there are specializations in surgery, otology, etc.

5. Finally, about 135 of these 450 specializations are broken down further into 510 subspecializations (*drobnyye spetsializatsii*). Many of these subspecializations (about 370) are found in the engineering-industrial branch. In the specialization copper and alloys metallurgy, for instance, there are subspecializations such as refining and smelting technology, primary processing, etc.

Table 3 reveals the pattern of grouping specialties in Soviet professional education by group specialties and branches.

To sum up, there are divisions in Soviet professional education which must be clearly distinguished. They are: branch (*otrasl'*), group specialty (*grupovaya spetsial'nost'*), specialty (*spetsial'nost'*), specialization (*spetsializatsiya*), and subspecialization (*drobnaya spetsializatsiya*). While the data in table 3 present a grouping of the types of Soviet professional training by branch, specialty group, and number of specialties, it should be noted that specialty groups correspond roughly to the *type* of institutes there are in Soviet education. The number of specialties (i. e., 295) corresponds roughly to the number of *types* of divisions (*fakul'tety*) found in various institutes and universities.

It is, of course, beyond the scope of this report to present a discussion of every one of these specialties and specializations, and of necessity our discussion must be limited to the larger aggregates (primarily on the branch level). The very number of specializations in Soviet professional education is quite suggestive. These narrow specializations have resulted in what might be called a breakup and differentiation of the traditional concepts of the engineering profession. In some fields, like university programs, for example, this breakup is not so distinct as it is in engineering, where such professional training as mechanical engineering is broken up into several dozen narrow specializations (like mechanical engineering in agricultural machinery, in machine tools, in casting equipment, in automobiles, in tractors, in aircraft engines, etc.). There are metallurgical engineers in copper and alloys, in lightweight metals, in nickel and cobalt, etc. There are mining engineers in the drilling of petroleum and gas wells, in the exploration of coal deposits, etc. There are civil engineers in bridge design, in flat surface structures (roads), in large-scale hydrotechnical structures, in industrial buildings, etc. There is narrow occupational fragmentation in every field of engineering.

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TABLE 3.—*Specialty groups and number of specialties in Soviet higher education (as of 1953–54)*

Branch and specialty groups	Total number of specialties in—	
	Specialty group	Branch
I. Engineering-Industrial branch		188
1. Geology and mining exploration	11	
2. Exploitation of mineral deposits, mining and primary processing	14	
3. Heat and electrical power engineering	8	
4. Metallurgy	12	
5. Machinebuilding engineering [1]	42	
of which—		
a. Heavy machinebuilding	9	
b. General machinebuilding	26	
c. Appliances and instruments	7	
6. Electrical and electronic (design-manufacturing) engineering	9	
7. Chemical engineering	16	
8. Technology of the food industry	12	
9. Wood processing, paper and related technology	6	
10. Light industry technology	12	
11. Printing and publishing	4	
12. Geodesy and cartography	4	
13. Meteorology and hydrology	4	
14. Civil (and other construction) engineering	18	
15. Transportation engineering	13	
of which—		
a. Railroad	5	
b. Water	5	
c. Automotive	2	
d. Air	1	
16. Communication engineering	3	
II. Agricultural branch		22
17. Agriculture and veterinary medicine	19	
18. Forestry	3	
III. Socioeconomic branch		24
19. Economics, planning and finance	22	
20. Jurisprudence	2	
IV. Health branch		8
21. Medicine and pharmacy	7	
22. Physical culture	1	
V. Education and arts branch		53
23. Education	48	
of which—		
a. Universities	20	
b. Pedagogy (upper)	11	
c. Pedagogy (intermediate)	5	
d. Pedagogy (lower)	7	
e. Cultural services	5	
24. Arts	5	
Total specialties		295

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[1] General designation for all types of mechanical engineering primarily, as well as for other types—aeronautical, naval, etc.

Source: I. Lyasnikov, *Podgotovka spetsialistov promyshlennosti SSSR* (Training of Specialists for Industry in the U. S. S. R.), Moscow, 1954, 89.

This narrow specialization came into being in the early 1930's, but 463 ●
since the late 1930's Soviet educational authorities have waged numerous 874x
campaigns (without much success) to put an end to it. There have been many decrees, regulations, and discussions to prevent fragmentation; but, in most instances, confronted with the argument that people trained in these fragmentary subspecializations (*drobnyye spetsializatsii*) are needed by industry for immediate employment, these pronouncements have had very little effect.

The drive in 1952–54 to put an end to fragmentation and to achieve some aggregation of narrow field specializations did not, and is not likely to, result in any drastic change in the near future. Although there has been persistent talk in the last few years concerning the broadening of general nonspecialized scientific or engineering education in order to curtail narrow specialization, so far the tendency which has prevailed over the last 25 years is still in force. As recently as this spring (1955) there was an announcement that the number of subspecializations and even specializations themselves had been "drastically curtailed."[31] But since it is not known how "drastically" it was curtailed and since there have been so many other announcements to the same effect in the past, only future developments in Soviet higher education will give us the answer.

Because of this large number of narrow specializations, because of the functional division of Soviet higher education and subordination of training to applied pursuits within each occupation, there are a great variety of training programs.

Training in Soviet Universities

Soviet universities offer sixty-odd types of training programs. Not all 874x
of them can be considered by this report. Whatever field of training is considered, it can be said that the university curriculum is based on 4,500–5,500 instruction hours, with the number of subjects of instruction ranging from 25 to 35. In most programs there is a required set of subjects which every student must take, but in some fields elective courses are offered, particularly in the humanities. The first 2 years are devoted to "general subjects of study," and usually the remaining 3 years are devoted to the major field of study.

1. *Professional Training in Scientific Fields in Soviet Universities*

In our discussion of university training programs a particular example, 815
that is, instruction offered in scientific fields, will be considered. Training 874x

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[31] *VVSh*, No. 3, 1955, 3.

It appears that most students just drift along with the tide of the 874x
totalitarian state. They go through the outward motions of learning 883
ideological dictates; they participate in political activities, because it 626
is a common standard of performance, because one is expected to know quotations from Lenin, and because one is expected to march in the May Day parade. What effect does such outward conformity have upon the training of Soviet specialists?

Refugee comments in this regard are revealing. It is stated, for example, that under such conditions the pursuit of knowledge tends to overshadow political indoctrination,[8] that students tend to be concerned with science and bury themselves in it to hide from Soviet reality. Lack of genuine enthusiasm for official doctrines, and escape from reality by greater devotion to academic pursuits, are reported to be very common among Soviet students. This would, in turn, imply that many accounts in the Soviet press concerning universal acceptance of the Communist faith by the army of specialists trained during the last decades must be viewed with great skepticism and with many reservations. To sum up, Communist thought control appears not to be so all-embracing or so effective as Soviet propaganda claims it to be or as some Western observers describe it. The detrimental effects of it upon the training of Soviet specialists and scientists cannot be qualified or measured in any reliable way, but it seems that there is some tendency for scientific truth to overshadow political doctrine even in the Soviet totalitarian state.

11. *Factors in the Choice of Study Field Affecting the Quality of Training*

It is well recognized that there are various factors which exercise an in- 874x
direct impact upon the quality of training. One of these factors is the 463
placement policy of graduates. According to law, since 1933 all specialists graduating from Soviet higher educational establishments are assigned to jobs.[9] This decree has been reinforced by other regulations (in 1936, 1937, 1940), all restricting the occupational mobility of graduates, and limiting the choice of occupation outside the specialty of their formal training. Job assignment takes place within 5 days after the issuance of the graduation certificate, and the minimum term of assignment is 3 years. In 1940, when labor legislation acts were reinforced through the introduction of labor books (without which an individual cannot be hired anywhere), the opportunity for specialists to change jobs at will was even further reduced. In view of these restrictions, the individual is likely

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[8] "My Experience as a Soviet School Teacher," unpublished manuscript, in English, New York: Research Program on the U. S. S. R., 19–20, 37.

[9] Movshovich, op. cit., 208–212.

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to seek occupational training which offers a good chance of satisfying his career expectations.

Since there is a high value placed on certain kinds of professional training, and since some occupations offer higher incomes and material comforts than others, many students choose their fields of training on the basis of these differential rewards. Administrative-managerial positions, scientific research, engineering, university teaching, medicine, agricultural occupations, secondary-school teaching, other social service occupations—these represent a sequential chain of diminishing monetary rewards. Administrative positions are filled not only from the various ranks of professionals, especially engineers, but also from other groups. These individuals, however, are selected primarily for good party standing and for noted past performance of one sort or another. On the whole, professionals of all types fare much better than any other group of wage earners, a consideration which makes higher education in any field quite attractive. Still, there are differential rewards for various occupations within the group of professionals.

Because occupations can be changed only with great difficulty, there is greater pressure toward the "prize" occupations. Engineers and scientists top the list, and therefore establishments offering this training have the greatest number of applicants. Institutes offering training in these fields place greater demands upon the student, and the standards of instruction can be enforced far more rigidly than in certain other fields of training. Thus, it may be easily seen that placement policy and the attraction of certain occupations exercise an impact upon the quality of training.

Another factor, related to the one described above, is that there are undoubtedly fields of science or occupations where the impact of the ever-changing political and ideological orthodoxy is heavily felt. Such fields as biology, agriculture, history, economics, humanities, and the social sciences in general, aside from offering smaller financial rewards, are politically hazardous as well. The party line, though it may be clearly defined at a given moment, may change in the foreseeable future. This may not only cause career handicaps but, in extreme cases, even threaten the individual's very existence. Training in these fields therefore is less attractive than in other professional fields, where the probability of political intervention—which is undoubtedly felt by each individual—is small. Engineering, applied sciences, medicine, and even secondary-school teaching, in the sciences particularly, are therefore more attractive than certain other fields of professional training. This explains to a large extent why there are stagnant fields with only a trickle of graduates each year and why other training establishments must refuse admission to the flocks of aspiring applicants.

871 account for graduates of educational establishments operated by Soviet
464 civilian authorities and exclude specialists trained in military or police
higher educational establishments or semiprofessional schools, which, if
x874 considered, would obviously increase the total number of trained specialists and particularly the number of those trained in the engineering-industrial and health fields.

At the same time, of course, it is obvious that the total number of trained specialists (i. e., 7,170,000) is biased upward because of some double counting. Some semiprofessionals continue their training in higher educational establishments and subsequently are counted as professionals. The extent of this bias cannot be ascertained with precision, but it is probably from 5 to 10 percent of the total number of professional graduates.

●463 During the period 1928–54 the Soviet Union trained about 17 semi-
464 professionals per 10 professionals, a ratio which according to the
x874 Soviet planning norms should have been higher. This ratio of trained
semiprofessional personnel and technicians to professional personnel and
871 engineers varied from field to field, being about 28 to 10 in agricultural fields, 25 to 10 in medical fields, 29 to 10 in socioeconomic fields, 18 to 10 in engineering-industrial fields, and only about 12 to 10 in educational and cultural services fields. Thus, the reliance upon the supply of specialized semiprofessional graduates was substantially greater in agricultural, socioeconomic, and medical fields than in engineering or education.

During the last two and one-half decades Soviet efforts in training specialists have centered on engineering-technical and educational fields. About 32 percent of the professional and semiprofessional graduates were trained for the field of education. Engineers and technicians and other specialists on both levels for industry, manufacturing, mining, transportation, and communication accounted for about 27 percent of graduates on both levels. About 20 percent of the specialists were trained for medical and public health fields. Agricultural field specialists accounted for only 13 percent, and all graduates in socioeconomic fields accounted for only 8 percent of specialists trained on both levels during this period.

Supply of Graduates With Higher Education

871 While a large number of semiprofessionals with completed secondary
464 specialized education who were trained in the period 1928–54 provided additions to the supply of technical, supporting and minor supervisory personnel for the Soviet economy, the flow of graduates from Soviet higher educational establishments was the main source of addi-

higher education employed in the national economy are taken into account, there were about 45 professionals per 10,000 population. 464

In 1950 the estimated number of persons with completed higher education employed in the national economy was about 1,513,000. Since Soviet authorities have been reluctant to release figures on the actual population of the Soviet Union in the postwar years, Western observers have had to rely upon various estimates. If we assume the estimated population of the Soviet Union for 1950 as ranging from about 193 million to about 206 million,[illegible] the number of professionals with completed higher education employed in the national economy ranges from 73 to 78 per 10,000 population. If all living persons with higher education (i. e., military, retired, incarcerated, etc.) are considered, this proportion might increase to as high as 95 to 105 persons with higher education per 10,000 population.[illegible] 162

Despite the lack of precision, it is apparent that by 1950 the proportion of persons in the Soviet Union with completed higher education to population was substantially smaller than that in the United States (in 1953 the United States had about 320 persons with higher education per 10,000 population), but slightly higher than that in most West European countries. At the same time it should be stressed that the proportion of persons with higher education in the Soviet population has made enormous gains over the last three decades when the number of persons with completed higher education increased from about 12 in 1926 to at least 80 in 1950 per 10,000 population. 162

Occupational Composition of Trained Professional Labor Force in the U. S. S. R.

The preceding discussion has dealt with the total supply of graduates and the estimates of the total number of trained specialists employed in the national economy of the U. S. S. R. It is of particular interest to consider now the occupational composition of Soviet professionals employed in the national economy of the U. S. S. R. Table 6 presents a summary of the estimates of trained professionals in different occupations on the basis of which the distribution and the rates of growth for 463

[illegible] Eason, "Population and Labor Force" in A. Bergson, *Soviet Economic Growth*, 102; or other population studies (Kulischer, Lorimer, Redding).

[illegible] This statement is based on two possible methods of estimating the total number of living graduates. One estimate for 1950 is about 1,890,000 living higher education graduates, which can be derived by using techniques already discussed in the earlier part of this chapter (see footnote 5 above). The second estimate for 1950 is about 1,940,000, which can be obtained if the assumption made that the 1939 relationship of all reportedly living persons with higher education to the actual number of persons with completed higher education employed in the national economy remained true for 1950. Both estimates, of course, should be regarded as useful approximations only.

463 different fields were verified. Before turning to a discussion of the data presented in table 6, several reservations must be made.

The data presented in table 6 refer to persons with completed higher education employed in the national economy only. The definitions of occupational fields which are used in table 6 are the same as those generally employed in Soviet official sources for grouping specialists by branch of employment and graduates by field of training. These categories are broad and designate entire segments of the economy and services rather than narrowly defined occupational fields commonly employed in American practice in reporting this type of information. Consequently, an analysis of these data lacks the desired refinement of occupational categories, which are more narrowly defined and, as a result, more precise.

The figures presented in table 6 for 1929 and 1937 are based on Soviet official reporting of the actual employment of professionals with completed higher education in the respective occupational fields. The 1937 composition of professionals by occupation can also be estimated on the basis of the 1932 actual employment of professionals by branch and annual additions of higher education graduates in the respective fields. This suggests that already by the mid-1930's it is verifiable, in gross terms, that most higher education graduates were employed in occupational fields coinciding with the field of their formal training.

Figures for 1940, 1950, and 1954 were estimated by using average annual rates of attrition (see discussion above) and on the basis of the actual employment of professionals by occupational field in 1937 and the annual influx of graduates in the respective fields.[20] After the estimates were made by using various Soviet pronouncements it was possible to ascertain that actual employment in a number of occupational fields (engineering, agriculture, health) was consistent with and closely approximated the estimates thus derived. Consequently, on the basis of available checks for a number of years and several fields, it was possible to verify the fundamental implication of these estimating procedures. It appears that there is only a limited transfer of graduates formally trained in one field into some other occupational field in the course of their employment.

Although the fundamental assumption of limited transfer is actually verifiable and consequently the data presented in table 6 do reveal the occupational composition of Soviet professionals with completed higher education, the problem of the utilization of professionals within any given occupational category is not solved by these findings. This is particularly true if a narrower definition of occupation is used, or if within a given occupation the vertical mobility of professionals into such positions as

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[20] For further details, see appendix to ch. VI, particularly general note to "C" tables, notes to tables C-9, C-10, C-12, and app. C-11.

TABLE 6.—*Distribution of Soviet trained professionals with completed higher education, by occupational field, and growth of professional fields, 1929–54*

[Year-end employment in the national economy of the U. S. S. R.]

Professionals with completed higher education by occupational training	1929		1937		1940		1950		1954		Ratio of growth from 1929 to 1954
	Thousands	*Percent*	*Thousands*	*Percent*	*Thousands*	*Percent*	*Thousands*	*Percent*	*Thousands*	*Percent*	
Engineers of all types in industry, construction, manufacturing, mining, transportation, communication, and other industrial field professionals	40.7	14.1	262.2	35.1	283.5	33.5	423.0	28.4	541.0	26.6	13.3
Agricultural specialists (agronomists, veterinarians; specialists in conservation, electrification and mechanization of agriculture, forestry)	12.5	4.4	89.5	11.9	97.3	11.4	140.0	9.2	189.0	9.2	15.2
Socioeconomic professionals in: (economics, trade, accounting, banking, planning, statistics, jurisprudence, social and communal services)	41.0	14.2	60.2	8.1	61.7	7.3	88.0	5.8	125.0	6.1	3.0
Educational professionals (teachers for all levels of school and professors—foreign language specialists, other cultural service professionals, art and music instructors and performers)	130.0	45.2	231.0	30.8	284.1	33.5	607.0	40.2	857.0	42.1	6.6
Health professionals in: (medicine—therapeutic and preventive; dentistry, pharmacy, hygiene, professional coaching, and physical culture instructing)	63.5	22.1	105.9	14.1	121.6	14.3	249.0	16.4	324.0	16.0	5.1
Total distributed	287.7	100.0	748.8	100.0	848.2	100.0	1,513.0	100.0	[1]2,036.0	100.0	7.1

[1] In addition, in 1954 there were about 182,000 professionals undistributed by occupational field (a large proportion of whom belong to the educational field). 1954 estimated grand total is 2,218,000.

Source: Tables A–1, A–3, C–9, C–10, C–12 in the appendix to ch. VI. Data for 1929 consist of 1928 and 1929 employment figures. Totals for educational and health field professionals same as in table A–1 in the appendix to ch. VI. Engineering, agricultural, and socioeconomic field professionals from *Nar Khoz—1932*, 488–493. See notes to table 2 in the text above for further comments about Soviet definitions of occupational fields.

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463 administration or management is considered. Furthermore, the limited interoccupational transfer does not preclude (as the Soviet press occasionally reveals in stories about the utilization of professionals) a person from assuming employment in an occupation distinctly different from that which coincides with the field of his formal training. This, however, takes place on a very limited scale only. In view of all this, it must be kept in mind that the problem of utilization of Soviet professionals within a given occupational field constitutes an additional issue, which must be singled out and which will be discussed briefly in subsequent parts of this chapter.

463 162 The data in table 6 reveal the growth of occupational fields and changes in distribution of Soviet professionals. During the 25-year period from 1929 to 1954, the Soviet trained professional labor force increased more than sevenfold. However, during this same period two fields of occupational specialization—engineering and agriculture—experienced growth at a rate twice as high as that for all professional personnel. Growth in other fields was disproportionately lower than increases in the professional labor force as a whole.

There were marked changes in the distribution of professionals by occupational field during this period. The engineering-industrial professionals emerged as the dominant component (about 35 percent) of the total professional labor force by the end of the Second 5-Year Plan (1937). Since then, though the number of engineering-industrial professionals more than doubled from 1937 to 1954 (1937, 260,000; 1954, 540,000), their relative proportion among all professionals has been declining. Despite this, however, in 1954 trained engineering-industrial professionals accounted for about 27 percent of all professionals employed in the national economy of the U. S. S. R., or almost twice their relative share in 1929.

Educational field professionals accounted in 1929 for about 45 percent, and in 1954 for about 42 percent of all professionals. Thus, educational field professionals, after the decline of their relative share to about 30 percent in the mid-1930's, at the end of the 25-year period had almost regained their original proportion and again accounted for the largest segment of all trained professionals. As a result of the 15-fold increase in the number of agricultural field professionals (1929, about 12,000; 1954, about 190,000), their relative proportion more than doubled during the last 25 years, and in 1954 represented about 9 percent of all professionals. Finally, the relative proportion of trained professionals in the health fields and particularly in the socioeconomic segment has declined markedly over the last 25 years.

In 1954 there were over 2 million persons with completed higher education employed in the national economy of the U. S. S. R. In 1954 about 42 percent of these were trained for and employed in the field of education, about 27 percent were trained in engineering and related 463 fields and employed in industry, manufacturing, mining, transportation, 162 and communication. In that year about 16 percent were health field professionals, about 9 percent were in agricultural fields, and only 6 percent were in all socioeconomic service fields.

Some Social Aspects of Soviet Professional Labor Force

1. *Place of Women Among Soviet Professionals*

During the last 25 years, the participation of women in professional 462 occupations in the Soviet Union has increased considerably. These changes in the relative proportion of women among professionals in individual fields are summarized in table 7.

The enormous increase in the relative proportion of women in the postwar period came about as a result of the war, and also because there were large numerical increases of professionals in the medical and eductional fields where the relative proportion of women continued to be extremely high. The relative proportion of women among professionals in 1950 was only slightly higher than the relative proportion of women among all workers and employees. In 1950 women accounted for 45.7 percent of all Soviet salaried persons employed in the nonagricultural labor force of salaried workers and employees.[26]

TABLE 7.—*Relative proportion of women among Soviet professionals (Year end)*

Occupational fields	*Percent of women among all professionals* 1929	1940	1951
Engineering	14.7	19.4	--------
Agricultural	9.2	24.4	--------
Socioeconomic	8.2	26.1	--------
Educational	21.0	37.0	--------
Health	47.2	56.9	--------
All fields	23.5	32.6	50.5
Total number, women professionals	68,000	277,000	830,000

Sources: The original 1930 distribution was obtained from *Nar Khoz—1932*, 488–540, and *Itogi Pervogo FYP*, 217. Data for 1940 were obtained as a projection of enrollment trends for women during the period 1930–40 upon data for graduations (see table A–3 in the appendix to ch. IV). The 1939 census serves as a check point (it also gives about 32 percent for women). The 1951 total number of women professionals (830,000) was reported in *Bol'shevik*, No. 12, 1952, p. 4. The percentage was derived on the basis of this total number of women professionals and the estimate of all professionals employed in the national economy in that year (table C–12 in the appendix to ch. VI). The percentage of women professionals in different occupational fields is not available.

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[26] As estimated from Eason "Population and Labor Force" in A. Bergson, *Soviet Economic Growth*, 110.

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2. *Social Origins of Soviet Professional Personnel*

After the October Revolution, Soviet leaders envisaged a rapid transformation of the managerial, technical, and cultural leadership in the U. S. S. R. Lenin saw a cultural revolution which would change the face of the intellectual elite in Russia. He felt that the old intelligentsia and professionals would be used only temporarily until the new proletarian cadres of specialists could be trained. Stalin, in the late 1920's and early 1930's, made many pronouncements which called for an increased tempo in the training of specialists from the working class. Both Soviet leaders tended to view the success of the Revolution and the construction of a socialist society as greatly dependent upon newly trained Soviet professionals who would be proletarian by origin. This ideologically and politically dictated orientation was incorporated in voluminous legislation and even in early planning—for example the First 5-Year Plan, which stressed the need for the "proletarization" of specialists (*orabocheniye kadrov*).[27]

The opportunity to accomplish these aims presented itself during the 1930's, when about a threefold increase in the size of the professional labor force was achieved. As was already indicated earlier in this volume (ch. IV), this policy of the proletarization of Soviet professional personnel had to be relaxed in the mid-1930's. The net result of this policy, however, is summarized in table 8.

TABLE 8.—*Composition of Soviet professional personnel by social origin*

Social groups	*Composition of Soviet professionals in percent (year end)* 1929	1940
Workers and their descendants	9.7	30.1
Peasants and their descendants	18.9	19.5
"Other": Artisans, intelligentsia, white-collar, and former proprietor classes and their descendants	71.4	50.4
Total professionals	287,700	848,200

Sources: Original 1929 distribution from *Nar Khoz—1932*, 488–493. Data for 1940 derived by projection of VUZ enrollment by social origin (table A–4, appendix to ch. IV) upon graduation data.

Thus, although the restrictive policies of the Soviet Government succeeded in raising about threefold the proportion of workers and their descendants by origin among Soviet professionals, on the whole during this crucial decade it was the "other" groups (i. e., nonworkers, intelligentsia, white collar, etc.) who were still largely responsible for additions to professional personnel.

The particular significance of this development can be appreciated when it is understood that "other" groups (intelligentsia, white collar,

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[27] *Plan Kadrov—1930*, 115–129. Beilin, *Kadry*, discusses this problem on almost every page.

and other minor categories), who in 1939 accounted for only about 7 463
percent of the U. S. S. R.'s total population, were responsible for about
40 percent of the additions to the professional labor force. While work- 565
ers and their descendants, despite the forceful policy, were responsible for additions to professional personnel only slightly higher than their relative share in the total population, peasants, who represented about 60 percent of the Soviet population, were responsible for less than 20 percent of the additions to Soviet professional personnel.

It can be argued that because of the expansion of all educational facilities (particularly secondary education in urban centers) in recent years, the relative share of workers and their descendants by origin among Soviet professionals increased somewhat in the postwar period. There is an equally strong argument, however, that in all probability the trend of the increasing proportion of "other" (nonproletarian and nonpeasant) groups among graduates of Soviet higher educational establishments continued in the postwar period. The second argument seems more plausible particularly in view of the fact that the Soviet Government has suppressed the release of any statistical data (though they are still compiled) dealing with the distribution by social origin of students in Soviet higher educational establishments. This complete taboo on discussing the social origin of Soviet professionals suggests the presence of unfavorable trends, which unfortunately cannot be assessed in quantitative terms.

3. *Soviet Professionals and Communist Party Membership*

It is particularly revealing to note that from 1929 to 1947 many Soviet 463
professionals were recruited into the ranks of the Communist Party
of the Soviet Union. In 1929 only about 7 percent of all professionals 665
were members of the Communist Party.[28] In 1947 about one-third of all Soviet professionals were Communist Party members. In 1947 about 38 percent of all engineers employed in the national economy, about 19 percent of medical doctors, about 19 percent of agricultural field professionals, and about 16 percent of professionals in the field of education were members of the Communist Party.[29]

This increase of Communist Party membership among professionals was brought about by the radical shift in policy on admissions and recruitment for party membership which took place in the mid- and late-1930's.[30] During that period various restrictions and discriminations against accepting intellectuals, white-collar workers, and other nonprole-

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[28] *Nar Khoz—1932*, 492.

[29] These percentages were ascertained on the basis of data on Communist Party membership presented in *Partiinaya Zhizn'*, No. 20, October 1947, 73–83, and the estimated number of professionals by field for 1947.

[30] For further details, see M. Fainsod, *How Russia is Ruled*, Cambridge: Harvard University Press, 1953, esp. 225–232.

463 tarian social groups into the ranks of the party were lifted, and extensive
666 campaigns recruiting professionals and other specialists into the party were conducted. Despite this drive to mobilize the support of professionals which started shortly before the war and despite the substantial gain in the relative proportion of party members among professionals, it is surprising that in 1947, after 30 years of Communist rule in Russia, only about one-third of all professionals had been recruited into the party.

Soviet Semiprofessional Personnel and Its Occupational Composition

463 Thus far, this discussion has centered on the total number of specialists, as well as on Soviet professionals with completed higher education. Various statements made above were possible because estimates were verifiable with a sufficient degree of accuracy and reliability. Unfortunately, except for the discussion of the overall supply of semiprofessionals with completed secondary specialized education made earlier, a discussion of occupational composition and various related aspects of the semiprofessional labor force is hampered by the lack of precise data on graduations, which are essential for obtaining estimates with the desired degree of reliability. Therefore, although data on the occupational distribution of trained semiprofessionals were derived for the postwar years, they must be viewed as very rough approximations only.

Table 9 summarizes actually reported employment and estimates in regard to the composition of semiprofessionals by field.

From 1932 to 1950 the size of the Soviet semiprofessional labor force increased about 3.3-fold. Again, as in the case of professionals, the growth of semiprofessionals in the fields of industry and agriculture was disproportionately higher, and in the fields of socioeconomic services and education disproportionately lower than the rate of growth of the total semiprofessional labor force. In the health field, however, the rate of growth of semiprofessional supporting personnel (medical nursing primarily) increased almost fivefold during this period.

The 1950 composition of semiprofessionals was about as follows: Engineering technicians and other semiprofessionals in industry accounted for about one-quarter of all semiprofessionals, and their proportion was only slightly below that of semiprofessionals in the education field (some 29 percent). Semiprofessionals in health fields accounted for about 22 percent, and those in agriculture and socioeconomic services for 13 and 11 percent, respectively, of all trained semiprofessionals employed in the national economy.

TABLE 9.- *Approximate composition of the Soviet semiprofessional labor force, 1932–50* 463● 162

[Year-end employment in thousands]

Field	1932	1937	1940	1950
Semiprofessionals and technicians in industry, manufacturing, mining, transportation, and communication	132. 5	372. 3	413. 5	749. 4
Semiprofessionals in agricultural fields	58. 5	145. 5	191. 7	385. 4
Semiprofessionals in socioeconomic services and branches	195. 6	184. 6	174. 9	349. 3
Semiprofessionals in the field of education and cultural services	382. 1	524. 3	618. 9	862. 0
Semiprofessionals in health fields	135. 0	213. 3	370. 6	672. 6
Total	903. 7	1, 440. 0	1, 769. 6	3, 018. 7

Source: Actual employment reported for 193' and 1937 from tables A–2 and A–3 in the appendix to ch. VI. 1940 and 1950 estimated employment from tables C–13 and C–14 in the appendix to ch. VI. See notes in the appendix for further details.

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Finally, it should be noted that while in 1950 the ratio of all trained semiprofessionals to all professionals employed in the national economy was about 2 to 1, there was wide divergence from this ratio in individual fields.[31] In the socioeconomic service fields far greater reliance upon trained semiprofessionals was reflected in the ratio of 39 semiprofessionals to 10 professionals. In agricultural and health fields there were about 27 semiprofessionals per 10 professionals employed. The ratio of technicians and industrial semiprofessionals to engineers with higher education was only 17 to 10, and in education it was only 14 to 10. The examination of these ratios suggests that if Soviet planning norms are taken into consideration, there is a substantial deviation from the planned optimum of the utilization of semiprofessional personnel in industry in particular.

Trained Specialists and Soviet Managerial, Administrative, Technical, and Supervisory Personnel

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Soviet professional and semiprofessional personnel with formal higher education and secondary specialized training represent an integral part of the bureaucratic, managerial, and administrative personnel, intellectuals, white-collar workers, technical and supervisory personnel. This large group is usually singled out and is commonly called in Soviet pronouncements by the broad and ambiguous term—"intelligentsia." Table 10 shows the composition of this group as a whole and various

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[31] In order to make these statements, a comparison of the data for the estimated number of professionals (table 6 above) and semiprofessionals (table 9) was made.

463 segments within it as revealed for a number of years in Soviet official
517 pronouncements. The data presented in this table reveal the total size of fields by function or by occupation.

Although the overall size of this group can be ascertained for 1936 only, from the fragmentary information available for 1926 and 1952 it is possible to obtain valuable information about the growth of various segments within it during the last three decades. Furthermore, on the basis of the available data it is possible to consider the role which is assigned to trained manpower in the bureaucracy of the Soviet state.

The data presented in table 10 refer to various groups defined by status and occupation. For the years 1926, 1936, and 1938 the figures reported have apparently been obtained from the census of population in these years. There are several occupations (engineers and architects, agronomists, scientists, physicians) for which it can be safely assumed that the majority of persons are professionals with higher education. In 1938 the figures for engineers, agronomists, and physicians closely approximate

TABLE 10.—*Composition of Soviet managerial, administrative, technical, specialized, and supervisory personnel*

[Year-end figures in thousands]

	(a) 1926	(b) 1936	(c) 1938	(d) 1952
Administrative personnel	(2)	1,751.0	(2)	(2)
Engineers and architects [1]	32.0	250.0	305.0	2,000.0
Intermediate technical personnel	175.0	810.0	896.0	
Agronomists [1]	18.0	80.0	90.0	400.0
Other technical agricultural personnel	13.0	96.0	114.0	
Scientists [1]	14.0	80.0	93.0	(2)
Teachers (of all ranks)	348.0	969.0	1,201.0	2,000.0
Cultural and educational workers	59.0	297.0	495.0	(2)
Arts	54.0	159.0	174.0	(2)
Physicians [1]	70.0	132.0	155.0	300.0
Intermediate medical personnel	130.0	382.0	607.0	900.0
Economists and statisticians	(2)	822.0	(2)	(2)
Bookkeepers and accountants	375.0	1,617.0	1,769.0	(2)
Legal workers	(2)	46.0	(2)	(2)
Students in higher education establishments	160.0	550.0	603.0	1,400.0
Other types (including military)	(2)	1,550.0	(2)	(2)
Total	(2)	9,591.0	(2)	(2)

[1] Categories thus indicated can be assumed to be composed mainly of professionals with higher education.

[2] Figures not available.

Sources: (a), (c) *Bol'shevik*, No. 10, 1940, 22; also see *American Quarterly on the Soviet Union*, Nos. 2–3, Nov. 1940, 95. (b) *Bol'shevik*, Nos. 5–6, 1939, 102–104. (d) L. Gruilow (ed.), *Current Soviet Policies*, Ann Arbor, Mich.: 1953, 163 (Beriya speech at 19th Party Congress). In subsequent years (after fall 1952) these original figures were repeated by several dozen other Soviet sources.

the estimated number of professionals employed in the respective fields 463 in the national economy. If it is assumed that the majority of persons in 517 these segments were trained professionals, it is possible to account for about 643,000 specialists, or about 80 percent of the trained professionals employed in the national economy of the U. S. S. R. in that year.

It appears that in 1936 trained professionals and semiprofessionals accounted for about one-fifth of a group which is officially defined as "Soviet intelligentsia." Unfortunately the total size of this group cannot be obtained for 1952, but on the basis of the growth in fields for which data are obtainable it appears that by 1952 the "Soviet intelligentsia" numbered about 12 to 14 million persons. If this figure is assumed to be correct, in that year trained professionals and semiprofessionals accounted probably for about one-third of this group.

From 1926 to 1952 engineers, architects, and technical personnel increased about tenfold. Agricultural field personnel experienced a 13-fold growth. The number of teachers of all ranks increased about fivefold. The number of physicians grew slightly more than fourfold. These differential rates of growth greatly resemble those which were already discussed in regard to the pattern of increases of trained professional and semiprofessional personnel.

Supply, Employment, and the Problem of Utilization of Engineers and Technicians in Soviet Industry

In the preceding parts of this chapter an attempt was made to deal with 816 aggregates and to ascertain the growth and the size of specialized fields, 463 primarily with reference to these aggregates. In conclusion, it is useful to bring together and to reconcile the different types of data discussed earlier and to supplement them with additional information which will be helpful in understanding the problems of employment and utilization of trained personnel in the U. S. S. R. This is particularly important in regard to the employment of engineers and technicians in Soviet industry.

It has earlier been stated that Soviet authorities distinguish, in addition to *trained* specialists, another category of professionals and semiprofessionals. This category consists of persons actually employed in the capacity of specialists although they have not had formal specialized training. Personnel of this type in Soviet industry are commonly called practicals (*praktiki*). Formally trained professionals and semiprofessionals who are employed in production, in supervisory or in managerial positions, and all "practicals" who are employed in a similar capacity in Soviet industry, manufacturing, mining, construction, transportation, 816 463 communication, etc., are commonly designated in Soviet practice as one group, which is called engineering-technical personnel (*ITR—Inzhenerno-Tekhnicheskiye Rabotniki*).

It was indicated earlier, in table 10 above, that in 1952 the Soviet Union had about 2 million engineers, architects and intermediate technical personnel.[1] This aggregate figure represents roughly the total number of persons in the category "engineering-technical personnel" and includes by definition trained professionals and semiprofessionals and all "practicals" who are employed as specialists in all branches of Soviet industry, manufacturing, mining, construction, transportation, and communication. According to estimates of trained manpower, in 1952 the Soviet Union had about 470,000 engineers and industrial field professionals with completed higher education, and about 850,000 trained technicians with completed secondary specialized education.[22] Consequently, trained specialists, professionals and semiprofessionals accounted in that year for about 1,320,000 persons, which is about two-thirds of all "engineering-technical personnel" (about 2 million) in all branches of Soviet industry, manufacturing, mining, construction, transportation, and communication.

In the Soviet Union (as well as in the United States in many instances) the supply of engineers and technicians in industry is related to the number of production workers. Table 5 above has shown the relationship of trained manpower to the Soviet labor force of salaried workers and employees.[2] It is revealing to consider now the relationship between trained engineers, trained technicians, all engineering-technical personnel (i. e., including "practicals"), and production workers in Soviet industry. This relationship is usually expressed in terms of the number of specialists per 1,000 production workers. This ratio obviously varies from one branch of industry to another, which to some extent is a reflection of the numerous technological and economic factors affecting the demand for engineers and technicians by different branches of industry.

During the last 25 years there has been a considerable increase in the supply of engineering and technical personnel in relation to the number of production workers employed in Soviet industry.[23] Table 11 summarizes the data which reveal the change in the ratio of engineering-technical personnel per 1,000 production workers from 1930 to 1950.

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[22] Tables C–12 and C–15 in the appendix to ch. VI. The figures on trained engineers and technicians in the text are rounded estimates of figures presented in the appendix.

[23] The concept "[illegible]iet industry" includes all mining, extracting, and processing industries, all types [illegible]anufacturing. It excludes construction, transportation, and communication.

1. [Cf. cat. 116, p. 246--Analyst]
2. [Cf. cat. 116, p. 235 -- Analyst]

74: De Witt S-4 (1952-1955) 1955 R1 Soviet Union R1

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TABLE 11.—*The relationship of engineering-technical personnel to production workers in all branches of Soviet industry, 1930–50*

	Ratio per 1,000 production workers			
Year end	*Trained engineers with completed higher education*	*Trained technicians with secondary specialized education*	*Practicals*	*Total engineering-technical personnel*
1930 actual	7.0	8.0	20.5	35.5
1936 actual	13.0	17.0	[illegible]	70.5
1940 actual	19.7	23.3	67.0	110.0
1950 plan	28.0	60.0	30.0	118.0
1950 actual	28.0	37.0	65.0	130.0

Source: All years, except 1950 Plan, from I. Myasnikov, *Podgotovka spetsialistov promyshlennosti SSSR* (Training of Specialists for Industry in the U. S. S. R.), Moscow, 1954, 79–80. 1950 Plan from *V[illegible]a*, No. 4, 1948, 16.

It should be noted first that, on the basis of the data presented in table 11, additional verification of the number of trained engineers and technicians employed in Soviet industry can be made. In 1950 there were about 28 trained engineers and about 37 trained technicians per 1,000 production workers in Soviet industry. Although the actual number of production workers alone in Soviet industry in 1950 cannot be obtained, if total employment in Soviet industry (i. e., about 14,500,000) is considered, it appears that the upper limit estimate of the actual number of trained engineers employed in Soviet industry (i. e., excluding transportation, communication, and construction) in 1950 was about 400,000 and of trained technicians was about 540,000. Consequently, Soviet industry in that year accounted for about 80 percent of all trained engineers employed in the Soviet Union and for about 65 percent of trained technicians. These percentages are not radically different from those which prevailed on the eve of the Second World War (1940), when Soviet industry accounted also for about 80 percent of all trained engineers employed in the Soviet Union. Construction, transportation, and communication engineers apparently accounted for the residual number of trained engineers and technicians.

From the data presented in table 11, it is evident that for Soviet industry as a whole the number of trained engineers and trained technicians per 1,000 production workers over the 20-year period 1930 to 1950 increased more than fourfold. Thus over these two decades the rate of growth of engineering and technical personnel was considerably greater than the expansion in the force of production workers.

The data also reveal that by 1950 trained engineers and technicians accounted for about one-half of all engineering-technical personnel, which, as we already mentioned, also includes by definition those persons performing supervisory and managerial functions. It should be noted, however, that in 1950 "practicals" still continued to account for

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about one-half of all engineering-technical personnel. If planned and actually attained ratios for 1950 are compared, it becomes evident that although the planned ratio of trained engineers per 1,000 production workers was realized, the utilization of "practicals" continued to be extensive, particularly because of the deficient supply of trained technicians. The utilization of "practicals" in place of trained technicians, particularly in production, appears to be quite frequent.[34]

It was revealed in 1948 that, according to the plan for 1950, the variation of the number of engineers and technicians per 1,000 production workers in industry was considerable. Table 12 presents these data.

TABLE 12.—*Planned relationship of engineering-technical personnel to production workers in different industries in 1950*

Branch of Soviet industry	*Ratio per 1,000 production workers* *Trained engineers with completed higher education*	*Trained technicians with secondary specialized education*	*Practicals*	*Total engineering technical personnel*
Electric power stations	50	115	20	185
All types of machine building	45	90	20	155
Petroleum industry	40	85	25	150
Chemical industry	35	80	25	140
Metallurgical industry	25	55	35	115
Food industry	20	55	35	110
Coal and peat industry	20	40	45	105
Construction materials industry	15	40	35	90
Textile and light industry	15	35	30	80
In all branches	28	60	30	118

Source: *VVSh*, No. 4, 1948, 15 (Lyasnikov's article).

The data presented in table 12 reveal that there is a considerably greater reliance placed upon engineers and technicians with formal training in those branches of Soviet industry which deal with machine building and other branches of heavy industry than in light industry. The existence of this pattern in the utilization of trained engineers and technicians is confirmed further by a statement that in 1950 "in certain branches of machine building the number of all engineering-technical personnel per 1,000 production workers exceeded 200, of whom more than one-half were trained engineers."[35]

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[34] In this connection, it should be recalled (see ch. III for details) that in recent years Soviet authorities have begun to emphasize strongly the need for increasing secondary semiprofessional training. That there is extensive substitution of "practicals" for trained technicians, as revealed by employment data, is responsible to a great extent for this drive to expand the training of technicians.

[35] I. Lyasnikov, *Podgotovka spetsialistov promyshlennosti SSSR* (Training of Specialists for Industry in the U. S. S. R.), Moscow, 1954, 17.

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It is apparent, therefore, that in 1950 the variation of the ratio of engineering-technical personnel per 1,000 production workers in different branches of Soviet industry was quite substantial. There was, furthermore, in Soviet industry a wide variation in the proportion of trained engineers and technicians among all engineering-technical personnel employed in a given branch. While there are some branches of Soviet industry where the ratio of engineering-technical personnel, and particularly of trained engineers to production workers, is quite low (light industry), there are other branches (probably the armaments-producing branches of machine building, aircraft manufacturing, and the like) where there is enormous concentration of engineering personnel. This pattern of wide differentials in the utilization of engineering-technical personnel throughout industry is, to a large extent, a reflection of the priorities given to certain branches of heavy industry in the Soviet economy.

For 1940 the actual distribution of trained engineers employed in Soviet industry can be ascertained. Table 13 presents these data.

TABLE 13.—*Approximate distribution, by specialty, of engineers with completed higher education employed in Soviet industry in 1940*

Engineering specialty	*Distribution in percent*
Mechanical	34
Power and electrical	9
Mining	8
Metallurgical	6
Chemical technology	11
Food processing	4
Textile and light industry	4
Engineering economics	11
Other undistributed	13
Total	100

Source: Lyasnikov, *Podgotovka spetsialistov promyshlennosti SSSR*, 65. This distribution refers to about 215,000 engineers.

The data in table 13 reveal that in 1940 the largest proportion of trained engineers were employed as mechanical engineers (i. e., primarily in machine building). Unfortunately the distribution of trained engineers by specialty employed in Soviet industry is not available for recent years. However, judging from the distribution of engineering students by specialty in recent years (see ch. IV), we note that there has not been any significant change in the trend of training by specialty, and consequently the distribution of trained engineers by specialty may not have altered markedly from that presented in table 13.

It is important to note that a substantial proportion of engineering-technical personnel employed in Soviet industry are called upon to perform managerial functions. The latest year for which a comprehensive

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distribution of trained specialists employed in Soviet industry and construction was found is 1940. Table 14 presents these data.

TABLE 14.—*Distribution of specialists with completed higher education, by type of employment, in Soviet industry and construction in 1940*

Type of employment	*Distribution in percent*
Administration and management of commissariats (ministries) and chief administrations	7.4
Administration and management of industrial trusts	9.1
Regional and local administrations of industrial and construction enterprises	5.2
Industrial enterprises	48.1
Construction enterprises	13.0
Scientific, industrial research and development	7.5
Educational establishments training specialists and industrial labor	9.7
Total	100.0

Source: Lyasnikov, *Podgotovka spetsialistov promyshlennosti SSSR*, 65. This distribution refers to about 240,000 specialists, primarily engineers as well as some other specialists with completed higher education employed in industry (about 215,000) and construction (about 25,000) in 1940.

The data in table 14 reveal that about 22 percent of trained specialists in 1940 were employed in organizations directly concerned with management, technical and economic planning in industry and construction. About 61 percent were employed in industrial and construction enterprises, and about 17 percent were engaged in industrial research and development and training establishments.

The data presented in table 14 indicate the tendency for Soviet engineers to be employed in the upper levels of industrial organization. Many engineers employed in these positions are undoubtedly called upon to perform administrative or managerial functions. However, it is erroneous to assume that *all* those who are employed on a ministry or a trust level do not perform any engineering functions. Industrial research and development, design of new products, and a large amount of engineering and technological planning are concentrated in offices and bureaus of Soviet economic ministries and trusts. This setup is responsible in part for the employment of a substantial proportion of engineers in the upper levels of industrial organization.

Although the data in table 14 reveal that some 60 percent of professionals (primarily engineers) in Soviet industry and construction are employed in plants and enterprises, it is evident from numerous Soviet press reports and pronouncements, both in the past and in recent years, that the proportion of trained engineers employed in production directly is quite low. In 1940 in Soviet industry only 31 percent of all engineers were employed directly in production.[99] This fact is consistent with the previous observation that on the lower levels of industrial organization it is common for engineering and technical functions to be performed by "practicals." Although it has recently (i. e., 1954) been stated that a further increase in the number of engineers employed in managerial positions is unlikely[87] and that most new engineering graduates will be assigned to jobs in industrial research or in production directly, in the past the trend prevailed of using engineers extensively for technical and economic management. 463 816

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[99] Ibid., 15.

In this section an attempt has been made in a very brief and cursory fashion to discuss the problem of the utilization of engineering-technical manpower in Soviet industry. It is apparent that in addition to trained engineers and technicians the Soviet Union makes extensive use of personnel without formal specialized education ("practicals"). In the past a trend prevailed by which a large number of "practicals" were used in production because a considerable proportion of trained engineers were engaged in industrial management and the supply of trained technicians was insufficient to replace all "practicals." Furthermore, the distribution of trained engineering manpower in relation to production workers throughout industry is very uneven. There are some branches of industry where an enormous concentration of engineering manpower was achieved because of the deliberate intent of Soviet planners to promote technological development of certain branches of industry.

In conclusion, it should be noted that the total number of trained engineers in the Soviet Union and the ratio of trained engineers to the number of production workers employed in industry in the Soviet Union appear in recent years to have been about the same or even slightly higher than in the United States. A consideration of various reservations regarding the effective utilization of engineers in the Soviet Union is superseded, however, by the fact that in recent years the annual rate of training engineers in the Soviet Union has been substantially higher than that in the United States.

Finally, it should always be kept in mind that the radical differences between an allocation economy and a free-enterprise economy are significant factors which exercise influence upon the differences in demand for engineers in the two countries. These differences, however, cannot be ascertained without a detailed and exhaustive investigation into the state of industrial technology and scientific development in any given branch of industry or in any given field of science in the two countries.

The Number of Advanced-Degree Holders and the Supply of Scientists in the U. S. S. R.

The estimates of trained manpower in the Soviet Union presented in the preceding parts of this chapter have dealt with professionals and semi- 000

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[87] Ibid., 68.

000 professionals. It is important now to ascertain the number of advanced-degree holders in the Soviet Union.

815 871 An elaborate procedure may be used to make postwar estimates on the number of advanced degree holders in the U. S. S. R. However, since there is a radical distinction in the significance of advanced degrees in the U. S. S. R. from those granted elsewhere,[38] a somewhat more simplified approach can be adopted. At the end of 1946 there were about 26,000 candidate-degree holders and 6,000 doctor-degree holders in the Soviet Union.[39] Using this as a base, we may estimate that by the end of 1953 there were about 57,000 advanced-degree holders in all fields. There were some 47,000 with candidate degrees and some 10,000 with doctor degrees.[40] The composition of these advanced-degree holders by field of science can be ascertained only on the basis of a projection of past trends, as was already done in chapter V. It may be recalled that these trends reveal that the great proportion (almost 75 percent) of all advanced degrees were awarded in the field of the natural and physical sciences.1

The majority of these advanced-degree holders among Soviet professionals were engaged either in teaching in Soviet higher educational establishments or in scientific research. In 1952 the teaching staffs of Soviet higher educational establishments numbered about 90,000. A large proportion of these teachers were engaged also in pure or applied research. In 1952 the Soviet Union also had about 68,000 research scientists employed in institutions other than higher educational establishments.[41] Consequently, assuming that the majority of academic rank appointees in the U. S. S. R. can be regarded also as scientists, we may say that the Soviet Union in 1952 had about 160,000 scientists. This number of research scientists and academic rank appointees represents approximately a four-fold increase over the number in 1930. Finally, it is apparent that by 1952 more than one-third of all Soviet scientists held advanced degrees.

Summary: A Brief Comparison of the Supply of Professional Manpower in the U. S. S. R. and the United States

464 • 463 On various occasions throughout this volume we have made reference to professional education in the United States, and it therefore seems fitting now to make some concluding comparisons, in summary fashion,

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[38] Concerning this distinction, see ch. V.

[39] *VVSh*, No. 11, 1947, 30.

[40] Figures for 1953 are obtained as estimates at 3 percent average annual losses and data on the award of advanced degrees presented in tables A-2 and A-4 in the appendix to ch. V.

[41] This estimate was made on the basis of the pronouncements in *Bol'shevik*, No. 6, 1941, 17; *Pravda*, October 6, 1952.

1[Cf. cat. 116, pp. 207-211--Analyst]

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concerning the availability of trained professional manpower in the two countries.[43] Higher education is undoubtedly more accessible in the United States than in the Soviet Union. In 1953 the United States had about 5,800,000 persons with completed higher education (college or first professional degree). The Soviet Union had roughly 2 million persons with completed higher education. However, *in applied scientific fields—such as engineering, agriculture, medicine—the number of Soviet professionals with completed higher education was about equal to or somewhat above the number of trained persons in these occupations in the United States.* In 1953 the Soviet Union had about 500,000 trained professional engineers, while in the United States there were about 530,000 trained engineers. The Soviet Union had about 280,000 physicians (and only 20,000 dentists), while in the United States there were about 195,000 physicians (and about 90,000 dentists). The United States had about 150,000 trained agricultural specialists, while the U. S. S. R. had about 170,000.

Of course, in order to assign meaning to these magnitudes, they must be viewed in relation to the size of the population and the nonagricultural labor force. While the Soviet population is about one-quarter larger than that of the United States, the Soviet nonagricultural labor force is still about one-third smaller than that of the United States. Thus, the proportionate share of trained professionals employed in the Soviet Union is lower with respect to the population at large, but obviously somewhat higher in relation to the nonagricultural labor force.

To sum up the other fields of occupational composition of the Soviet professional labor force, although the number of teachers of all ranks and at all levels of the educational system is larger in the Soviet Union than in the United States, the relative share of persons with completed higher education among all teachers is substantially smaller in the U. S. S. R. While the Soviet Union in 1952 employed about 2 million teachers, the relative share of those with completed higher education was only about 37 percent (750,000); in the United States in 1953 there were some 1,400,000 teachers, among whom about 70 percent had higher education. The number of teachers in Soviet higher educational establishments was about one-half of that in the United States. In 1952 the Soviet Union had about 90,000 teachers in higher educational establishments, while the United States, in 1953, had about 210,000.

Finally, while in the United States there was a large supply of trained professionals in various fields of business, law, commerce, the humanities, and various social sciences, etc., in the U. S. S. R. there were very few indeed. The few Soviet professionals who did have training in the humanities or the social sciences were employed in teaching fields. There were, for example, less than 100,000 professionals in the U. S. S. R. with

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[43] United States data which follow are taken from Wolfle, op cit., passim.

464 training in the socioeconomic sciences, as compared with over 1 million in the United States.

463 Analysis of the Soviet professional labor force by occupational field, as well as certain comparisons just made with professional personnel in the United States, suggest that Soviet higher education is still oriented primarily towards the training of specialists in scientific-technical and applied fields (engineering, agriculture, medicine), and has succeeded over the past two and a half decades in reaching a level of close equivalence, and occasionally of numerical supremacy, to that in the United States. Furthermore, Soviet secondary semiprofessional education has provided a large supply of trained supporting personnel, which in the United States is obtained mainly through the automatic process of on-the-job training or through the underutilization of trained college graduates.

As far as the supply and utilization of trained professional manpower is concerned, the Soviet Union over the last 25 years has made these substantial gains, despite the disrupting effects caused by forced collectivization, purges, and war, as well as the radical experimentation which took place in the field of education in the late 1920's. The growth of professional manpower has been facilitated by the extensive utilization of women (50 percent of all professionals). The expansion of this manpower, despite all ideological and political preconceptions advanced by the Communist dictatorship, has proceeded from among the ranks of descendants of the intelligentsia classes. Despite severe pressures for conformity and despite continuous campaigns to recruit professionals into the ranks of the Communist Party, especially since 1935, only about one-third of Soviet professionals have formally embraced this allegiance.

Increases in the Soviet professional labor force were sustained not only by the ability of Soviet higher educational establishments to turn out graduates, but also through the preferential treatment of specialists. However, in spite of such treatment, the net losses among Soviet trained professionals during the last 25 years have been substantially greater than in the United States. Nevertheless, at the present time, the annual losses are substantially smaller than in this country. While annual additions to trained personnel in all fields in the Soviet Union are still smaller than those in the United States, additions to specialized personnel in scientific-technical and applied fields are greater than in the United States and will, in all probability, continue to be. While Soviet official sources continue to complain of shortages of trained professional personnel, the drive to increase Soviet professional manpower at a rate greater than that for the labor force itself still continues to be the long-run objective of Soviet planners in their desire to improve already existing and to master new industrial technology. The success of this undertaking is still regarded as being largely dependent upon the future additions of formally trained specialists.

Throughout this volume many reservations have been made concerning the training, supply, and utilization of professional personnel in the U. S. S. R. Despite these reservations, we must bear in mind that during the last two and a half decades the Soviet Union has made enormous strides towards building up its specialized manpower resources. As a result of its efforts, it has reached a position of close equivalence with or even slight numerical supremacy over the United States as far as the supply of trained manpower in specialized professional fields is concerned. The Soviet effort continues. Our own policies in the field of education and in regard to specialized manpower resources will decide whether within the next decade or so the scales will be tipped off balance.

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Table C-9 Soviet professional labor force, by field, 1940.

Table C-10 Soviet professional labor force, by field, 1950.

Appendix C-11 Checks upon estimates of the size of the Soviet professional labor force, by field, in 1940 and 1950.

Table C-12 Soviet professional labor force, by field, 1950-54.

Table C-13 Soviet semiprofessional labor force, by field, 1940.

Table C-14 Soviet semiprofessional labor force, by field, 1950.

Table C-15 Soviet semiprofessional labor force, by field, 1950-54.

GENERAL NOTE ON ESTIMATES OF THE SIZE AND OCCUPATIONAL COMPOSITION OF SOVIET TRAINED MANPOWER AND ORGANIZATION OF THE APPENDIX TO CHAPTER VI

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This appendix consists of various tables which present employment data and summarize the number of graduates by year and period, and finally presents estimates on the basis of both types (employment and graduates) of data. Finally, various checks are employed to ascertain the reliability of estimates and their relation to various official pronouncements.

Throughout this appendix the term "professional" is used to designate persons with completed higher education, and the term "semiprofessional" is used to designate technicum graduates; i. e., persons with completed secondary specialized education.

Tables A-1, A-2, A-3, A-4, A-5, A-6, and A-7 summarize various data concerning the employment of trained specialists. Table B-1 and the supplement to it present data about graduates. Finally, all "C" tables represent various estimates of trained personnel and checks upon these estimates. The technique of each estimate is explained in the notes to each "C" (or set of "C") tables.

It should be borne in mind that estimates presented in this appendix are rough approximations. When Soviet sources state, for example, that there were "about 6 million" trained specialists employed in the national economy of the U. S. S. R. in 1954, it is indeed a very rough figure. When Soviet sources report an increase of 109 percent, it could obviously mean at least a variation of 1 percent from 108.5 to 109.5 percent. After making use of this type of information, which admittedly lacks precision, it is obvious that various estimates do and should differ one from another. The usefulness of these estimates consists not in their precision as absolutely exact magnitudes but in the fact that they are consistent and that they do agree as rough approximations.

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TABLE A-1.—*Composition of Soviet trained manpower, by employment, year end 1928*

[Number employed in thousands]

	Professional	*Semiprofessional*	*Professional and semiprofessional combined*
I. All production, administrative, and exchange branches of national economy	90.0	56.0	146.0
1. Industry, construction, transportation, communication	--------	------	-------
a. Production engineers and technicians only	17.9	19.9	37.8
2. Agriculture	--------	------	-------
a. Agricultural specialists without administrative functions	9.3	8.5	17.8
3. Administrative, government, and exchange	62.8	27.6	90.4
a. Socioeconomic segment only	--------	------	-------
II. Educational-cultural	[a](130.0)	------	-------
1. Primary- and secondary-school teachers	26.0	185.5	211.5
2. Higher education teachers	[b] (10.4)	------	-------
III. Health	63.5	72.0	135.5
1. Medical personnel only	--------	------	-------
Total	[c] (283.5)	------	-------

[a] In this segment in 1932 there were about 155,000 (see table B-1 below) persons. Since about 30,000 graduated during the 5-year period, there were about 130,000 "educational-cultural" specialists in 1928.

[b] *Plan Kadrov—1930*, p. 104.

[c] By addition of I, II, III, where II is an estimate.

Sources and notes

All figures except those in parentheses from *Itogi Pervogo FYP*, pp. 215–219, 275. The source does not give full coverage of all trained specialists employed. Productive branches in engineering and in agriculture are singled out, but administrative employment of trained specialists is not given by segment.

TABLE A-2.—*Composition of Soviet trained manpower, by employment, year end 1932*

[Number employed in thousands]

	Professional	*Semiprofessional*	*Professional and semiprofessional combined*
I. All production, administrative, and exchange branches of national economy	229. 2	386. 6	615. 8
1. Industry, construction, transportation, communication	------	------	-------
a. Production engineers and technicians only	73. 6	132. 5	206. 1
2. Agriculture	------	------	-------
a. Agricultural specialists without administrative functions	36. 3	58. 5	94. 8
3. Administrative, government, and exchange	119. 3	195. 6	314. 9
a. Socioeconomic segment only	------	------	-------
II. Educational-cultural	156. 9	382. 1	539. 0
1. Primary- and secondary-school teachers	43. 2	344. 0	387. 2
2. Higher education teachers	------	------	-------
III. Health	76. 3	135. 0	211. 3
1. Medical personnel only	------	------	-------
Total (I, II, III)	462. 4	903. 7	1, 366. 1

Sources and notes

Vtoroi FYP, pp. 512–513. This table is compiled from Gosplan reporting with full coverage. Administrative personnel (I–3) is singled out from all productive branches of the national economy and is not distributed by field.

The total of 1,366,000 trained specialists constitutes about 50 percent of all specialists employed in the national economy (2,737,000).

TABLE A-3.—*Composition of Soviet trained manpower, by employment, year end 1937*

[Number employed in thousands]

	Professional	*Semi-professional*	*Professional and semi-professional combined*
I. All production, administrative, and exchange branches of national economy	411.9	702.4	1,114.3
1. Industry, construction, transportation, communication	262.2	372.3	634.5
a. Production engineers and technicians only	------	------	-------
2. Agriculture	89.5	145.5	235.0
a. Agricultural specialists without administrative functions	------	------	-------
3. Administrative, government, and exchange.	------	------	-------
a. Socioeconomic segment only	60.2	184.6	244.8
II. Educational-cultural	231.0	524.3	755.3
1. Primary- and secondary-school teachers	------	------	-------
2. Higher education teachers	------	------	-------
III. Health	105.9	213.3	319.2
1. Medical personnel only	------	------	-------
Total	748.8	1,440.0	2,188.8

Sources and notes

Tretii FYP, p. 238. This is again Gosplan reporting of so-called full coverage of number of specialists employed. Administrative personnel is reported within a given segment and is not singled out as one group for all productive branches of the national economy. No indication is given as to the number of non-trained specialists employed in addition to trained personnel.

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TABLE A-4.—*Postwar pronouncements about the number of trained specialists employed in the national economy of the U. S. S. R., 1946–54*

[Year-end reference]

Year	*Reference of increase*	*Source*
1946	"Somewhat over 3 million"	*VVSh*, Nos. 11–12, 1946, p. 1 (Kaftanov).
1948	155 percent of 1940	*Nar Khoz-SBX*, No. 3, p. 413 (Itogi 1948).
1949	168 percent of 1940	*Nar Khoz-SBX*, No. 3, p. 445 (Itogi 1949).
1950	109 percent of 1949	*Nar Khoz-SBX*, No. 4, p. 423 (Itogi 1950).
1950	184 percent of 1940	*Voprosy Ekonomiki*, No. 5, 1951, p. 13 (Itogi 1946–50).
1951	108 percent of 1950	*Voprosy Ekonomiki*, No. 2, 1952, p. 11 (Itogi 1951).
1951	"Somewhat over 5 million"	*Bol'shevik*, No. 7, 1952, p. 26 (Kulagin article).
1952	108 percent of 1951	*Pravda* (Malenkov), Oct. 6, 1952.
1952 (fall)	"About 5,500,000" or "about 220 percent of 1940"	*Pravda*, Jan. 23, 1953 (Itogi 1952).
1953	105 percent of 1952	*Pravda*, Jan. 31, 1954 (Itogi 1953).
1953	127 percent of 1940	*Pravda*, Mar. 13, 1954 (Saburov speech).
1954	109 percent of 1940	*Pravda*, Jan. 21, 1955 (Itogi 1954).

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NOTES TO TABLE A-4

These pronouncements have to be elaborated upon and worked out in numerical terms. Then they may be used for checking purposes with various estimates.

In the first place, by using 1952 or 1951 as a base, we can obtain several rough approximations as to the size of the professional and semiprofessional labor force for various years. On the basis of the data stated in the table above, the following derivations can be made:

1. 1952 (fall) total size was about 5,500,000, which was 2.2 times larger than in 1940, making 1940 about 2,500,000.

2. 1952 total was about 5,500,000, which was 108 percent of 1951, and therefore 1951 total was 5,093,000; 1951 total was 108 percent of 1950 or 4,715,000.
   (*a*) 1950 was 184 percent of 1940; consequently 1940 was 2,562,000.
   (*b*) 1950 total was 109 percent of 1949 and therefore 1949 total was 4,325,000; 1949 total was 168 percent of 1940, making 1940 total 2,574,000.

3. Total size in 1951 was about 5 million, which was 108 percent of 1950 and 1950 therefore was about 4,630,000.
   (*a*) 1950 total was 184 percent of 1940; consequently 1940 was 2,516,000.
   (*b*) 1950 total was 109 percent of 1949 and therefore 1949 total was 4,248,000; 1949 total was 168 percent of 1940, giving 2,528,000 for 1940.

4. 1951 total was about 5 million, which was 108 percent of 1950, thus 1950 was about 4,630,000; 1950 total was 109 percent of 1949, and therefore 1949 total was 4,248,000. 1953 total was 137 percent of 1949, and therefore 1953 total was 5,820,000.

5. 1952 total was about 5.5 million, 1953 total was 108 percent of 1952 or 5,940,000; 1953 total was 137 percent of 1949 total, and therefore 1949 total was 4,336,000. 1949 total is 168 percent of 1940, and consequently 1940 total is about 2,580,000.

6. 1951 total was about 5 million; 1952 total was 108 percent of 1951 total, making 1952 total 5.4 million; 1953 total was 108 percent of 1952 total, or 5,832,000; 1953 total was 137 percent of 1949 total, and therefore 1949 total was 4,257,000. 1949 total is 168 percent of 1940, making 1940 total 2,534,000.

7. 1948 total was 155 percent of 1940; consequently—
   (*a*) Assuming 1940 as 2,500,000, 1948 total was 3,875,000.
   (*b*) Assuming 1940 as 2,550,000, 1948 total was 3,952,000.

8. 1954 total was 109 percent of 1953; consequently assuming 1953 total as about 5,820,000, we obtain 1954 total of 6,345,000.

All these computations tend to show that, although none of the figures coincide for a given year and they all show differences depending on the way in which they were derived, nevertheless, from official pronouncements rough approximations can be obtained about the size of the Soviet professional and semiprofessional labor force combined. The variation is obviously due to the rounding of both base figures for 1952 and 1951 and reported percentage increases. Despite this, the figures for the following years can be accepted as rough approximations:

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x 874

TABLE B-1.—*Summary of graduations of Soviet professionals and semiprofessionals, 1928–54*

[In thousands]

	1928	1st 5-Year Plan					2d 5-Year Plan						3d 5-Year Plan	
		1929	1930	1931	1932	1929-1932	1933	1934	1935	1936	1937	1933-1937	1938	1939
Graduations of professionals from higher educational establishments:														
1. Engineering	8.9	11.0	20.8	18.8	17.1	67.7	7.0	18.9	37.2	35.8	34.0	134.4	31.3	39.4
2. Agricultural	6.4	7.0	6.7	8.5	8.4	30.6	4.8	6.3	8.6	10.4	11.3	41.6	10.2	10.7
3. Socioeconomic	2.0	4.8	4.8	5.0	3.3	17.9	2.5	2.5	5.0	6.4	5.0	21.4	5.9	5.9
4. Educational	5.2	5.7	7.2	11.6	10.1	34.6	10.5	7.9	12.5	21.5	31.7	84.2	37.9	30.6
5. Health	6.2	4.0	4.4	6.5	4.3	19.2	6.0	2.8	7.6	9.3	12.0	36.1	13.0	13.7
6. Total (1-5)	28.7	32.5	43.9	50.4	43.2	170.0	30.3	38.1	71.0	83.4	94.0	317.7	98.3	100.3
7. C. P. schools	—	—	—	—	—	—	4.3	11.1	13.7	14.3	9.9	53.3	5.5	N
8. Correspondence-extension	N	—	—	—	—	—	N	N	N	N	N	N	—	—
9. Total (6-8)	28.7	32.5	43.9	50.4	43.2	170.0	34.6	49.2	84.7	97.6	104.0	371.0	103.8	100.3
Graduations of semiprofessionals from secondary specialized schools:														
10. Engineering	6.8	8.2	14.0	30.6	43.7	96.6	52.6	38.7	45.4	42.9	37.6	213.3	44.1	(15.2)
11. Agricultural	4.4	6.1	9.9	17.8	26.2	60.0	25.2	14.2	14.5	17.5	22.0	94.4	28.8	(15.7)
12. Socioeconomic	1.2	2.6	3.0	3.8	6.2	14.6	7.3	6.9	6.5	7.3	7.8	35.7	7.3	(7.1)
13. Educational	11.3	16.1	25.2	22.5	18.7	82.5	33.2	26.5	31.1	37.6	40.1	170.5	67.2	(17.3)
14. Health	4.8	4.9	9.3	10.5	12.9	37.6	14.5	11.0	14.7	21.6	28.4	100.3	53.8	(3.3)
15. Total (10-14)	28.5	37.9	61.4	84.2	107.7	291.3	132.7	97.3	112.2	126.9	135.8	605.0	201.2	(58.6)
16. Correspondence-extension	N	—	—	—	—	—	N	N	N	N	N	N	—	—
17. Total (15-16)	28.5	37.9	61.4	84.2	107.7	291.3	132.7	97.3	112.2	126.9	135.8	605.0	201.2	(58.6)
Total of professional and semiprofessional graduates:														
18. Grand total (9, 17)	57.2	70.4	105.3	134.6	150.9	461.3	167.3	146.5	196.9	224.5	239.7	976.0	305.0	158.9

See footnotes at end of table.

TABLE B-1.—*Summary of graduations of Soviet professionals and semiprofessionals, 1928–54*—Continued

	3d 5-Year Plan		War years						4th 5-Year Plan		5th 5-Year Plan			
	1940	1938–1940	1941	1942	1943	1944	1945	1941–1945	1946–50 total	1946–50 annual average	1951	1952	1953	1954
Graduations of professionals from higher educational establishments:														
1. Engineering	29.3	89.0	27.5	13.4	9.7	9.3	9.2	69.1	(160.3)	(32.0)	30.0	30.0	40.0	53.0
2. Agricultural	10.1	31.0	8.0	6.2	1.9	2.3	2.7	21.1	(50.8)	(10.1)	12.0	15.0	17.0	18.0
3. Socioeconomic	4.8	16.6	3.9	2.7	1.0	1.1	1.4	10.1	(34.6)	(6.9)	(11.0)	(13.0)	[12.0]	(8.0)
4. Educational	40.6	118.1	47.6	25.4	5.9	15.2	30.1	124.2	(298.0)	(59.6)	80.0	90.0	70.0	70.0
5. Health	17.4	44.0	17.7	21.2	9.3	7.8	6.8	62.8	(108.3)	(21.7)	20.0	(32.0)	[21.0]	24.0
6. Total (1–5)	102.2	298.7	104.7	68.9	27.8	35.7	50.2	287.3	652.0	(130.3)	(153.0)	180.0	[160.0]	173.0
7. C. P. schools	N	5.6	N	N	N	N	N	N	N	N	N	N	N	N
8. Correspondence-extension	—	—	—	—	—	—	—	—	—	—	(48.0)	41.0	[40.0]	57.0
9. Total (6–8)	102.2	304.3	104.7	68.9	27.8	35.7	50.4	287.3	652.0	(130.3)	201.0	221.0	200.0	230.0
Graduations of semiprofessionals from secondary specialized schools:														
10. Engineering	(31.7)	(112.0)	—	—	—	—	—	—	(337.0)	(67.4)	—	—	—	—
11. Agricultural	(23.5)	(78.0)	—	—	—	—	—	—	(193.0)	(38.6)	—	—	—	—
12. Socioeconomic	(7.1)	(21.5)	—	—	—	—	—	—	(198.0)	(39.6)	—	—	—	—
13. Educational	(74.2)	(198.7)	—	—	—	—	—	—	(289.0)	(57.8)	—	—	—	—
14. Health	(79.4)	(215.5)	—	—	—	—	—	—	(261.0)	(52.2)	—	—	—	—
15. Total (10–14)	(215.9)	(625.7)	[a] 158.0	[a] 182.0		[a] 193.0		[a] 533.0	1,278.0	(255.6)	—	—	—	—
16. Correspondence-extension	—	—	—	—		—		—	—	—	—	—	—	—
17. Total (15–16)	(215.9)	(625.7)	158.0	182.0		193.0		533.0	1,278.0	(255.6)	262.0	[250.0]	300.0	320.0
Total of professional and semiprofessional graduates:														
18. Grand total (9, 17)	318.1	930.0	263.0	—	—	—	—	820.3	1,930.0	(385.9)	463.0	[471.0]	500.0	550.0

N—None or negligible. ( ) Estimated figures. [ ] Figures derived by interpolation. (—) Figures not available. [a] See sources and notes to table B-1.

SOURCES AND NOTES TO TABLE B-1

All figures without footnotes are from tables A-1, A-2, A-3 of the appendix to chapter III and from tables A-1 and A-2 of the appendix to chapter IV. The totals for the periods are the sums of individual years. Row 18 (grand total) is obtained by addition of rows 9 and 17. Figures in parentheses are estimates derived in appendices to chapters III and IV. Figures in brackets are interpolations. The following supplement to this table gives the derivation of figures for technicum graduates during the war years which are indicated by footnote *a* in table B-1.

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SUPPLEMENT TO TABLE B-1.—*Total number of graduates from higher educational establishments and secondary semiprofessional training institutions reported for certain periods*

[All figures rounded in thousands]

Period	(A) *Higher education graduates in all fields*	(B) *Secondary semiprofessional graduates in all fields*
1. 1928	29	29.
2. 1929–32	170	291.
3. 1933–37	370	623.
4. 1938–45	590	1,150.
5. 1928–37	567	943.
6. 1929–37	540	914.
7. 1928–45	1,159	2,099.
8. 1929–45	Over 1,100	----------
9. [illegible]942–45	183	375.
[illegible]28–43	---------	Over 1,900.
[illegible]41–43	---------	340.
[illegible] 1946–50	652	1,278.

Sources and notes

1, 2, 3A, B.—*Kul't Stroi—1940*, p. 112. Also 2A, 3A in *VVSh*, No. 5–6, 1946, p. 1. All totals agree roughly with figures given for given periods in table B-1.

4A.—*VVSh*, No. 4, 1948, p. 12.

4B.—*VVSh*, No. 4, 1948, p. 12. There is an obvious error in the figure given by this source. It states that technicum graduates (1938–45) were about 1,050,000. A check with all other figures reveals that it should read "about 1,150,000."

5A.—*BSE-SSSR*, 1947, col. 1235.

5B.—Ibid., col. 1231.

6A, B.—*VVSh*, No. 4, 1948, p. 12.

7A, B.—*BSE-SSSR*, 1947, col. 1143.

8A.—*VVSh*, Nos. 5–6, 1946, p. 1.

9A.—Idem.

9B.—*BSE-SSSR*, 1947, col. 1231.

10, 11B.—Movshovich (compiler), *Tekhnikumy . . .*, 1945, p. 17.

12A, B.—*Pravda*, April 17, 1951 (Itogi 1946–50).

NOTE.—As far as the aggregate number of graduates from higher educational establishments is concerned, there is close correspondence if figures for shorter periods are added together to obtain data for longer periods. There are minor discrepancies of several thousand due to rounding. The same applies to technicum graduates, where, however, the discrepancies are somewhat larger and run up to 10,000.

On the basis of the number of technicum graduates reported for given periods, the number of graduates during the war can be ascertained. This is done as follows: 1942–45 graduates are given (9B) as 375,000. 1938–45 graduates were (4B) 1,150,000. Therefore, 1938–41 graduates would be about 775,000. At the same time, 1928–43 graduates (10B) were "over 1,900,000." 1941–43 graduates (11B) were 340,000, consequently 1928–40 graduates were 1,560,000. Subtracting (5B) 943,000 for 1928–37 graduates, we obtain about 617,000 for 1938–40, or about 10,000 lower than the figure for 1938–40 in table B-1, which serves as a check. Thus 1941 graduates were (775,000 [1938–41] minus 617,000 [1938–40]) 158,000, or somewhat above this figure. 1942–43 graduates were about (340,000 [1941–43] minus 158,000 [1941]) 182,000. Finally, 1944–45 graduates were about (375,000 [1942–45] minus 182,000 [1942–43]) 193,000. To sum up:

1941 graduates	About 158,000	463
1942, 1943 graduates	About 182,000	
1944, 1945 graduates	About 193,000	874x
1941–45 total	533,000	

These figures are introduced into table B–1, row 15, for given years and footnoted as *.

The problem of distributing these graduates by field is a difficult one. The only justifiable assumption is the projection of the 1938–40 trend into the war period. This is done as follows:

Semiprofessionals by field	*1938–40 graduates (thousands)*	*Distribution in percent*	*Hypothetical distribution of 1940–45 graduates by field (thousands)*
Engineering	112	17.9	96
Agriculture	78	12.4	66
Socioeconomic	21	3.4	18
Education	199	31.8	169
Health	216	34.5	184
Total	626	100.0	533

This, however, probably favors the educational field because it is more likely (and various reports indicate that this is the case) that the relative share of engineering technicians trained during the war increased in comparison to other fields of secondary specialized training. Therefore this distribution is of limited use only (it was not incorporated into table B–1).

Finally, in order to make estimates concerning the total size of the professional and semiprofessional labor force, data about graduating classes for postwar years (1946–50) will be used. These graduating classes in the postwar period (1945–50) were as follows:

[In thousands]

Year	*Graduating class from higher educational establishments*	*Graduating class from technicums*	*Total graduates*
1945	50	70	120
1946	49 [64]	191 [196]	240 [260]
1947	92 [120]	230 [235]	322 [355]
1948	122	252	374
1949	173	272	445
1950	173	327	500

The graduating classes include extension training graduates. The data are identical with those presented in the appendices to chapters III and IV. However, an adjustment of figures for graduates in 1946 and 1947 is necessary. The 1946–50 total of *technicum graduates officially reported was 1,278,000*, but when the annual figures for this period are totaled, a figure of 1,272,000 is obtained. Extension training graduates were not reported in 1946 and 1947. Among technicum graduates there were apparently about 10,000. While higher education extension graduates were not reported for 1946 and 1947, there is a discrepancy of 43,000 between the total number of graduates (652,000) reported for 1946–50 and the total of annual figures on graduating classes. Therefore, arbitrary adjustments of graduating classes for these years (1946, 1947) were made, and they are given in the table above in brackets. Only limited use of these data will be made in the estimates below, and they were not included in table B–1.

Soviet trained manpower. One procedure is via hypothetical constructs; the other, via the assumption of a uniform (3 percent) average annual attrition rate for the entire period (1937–50). The first method is more complicated and more revealing; the second, less refined and disregards the fact that prewar (1937–40) withdrawal from the professional and semiprofessional labor force was at the rate of almost 8 percent per annum, that hypothetical war losses were probably 8 percent of the 1940 base, that slightly lower than 2 percent average annual losses were in effect in the postwar period due to the influx of personnel previously (1937–40 or during the war) withdrawn from the civilian labor force. Keeping these complications in mind, let us proceed to estimate the size of the professional and semiprofessional labor force distributed by field.

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TABLE C-9.—*Soviet professional labor force, by field, 1940*

[In thousands]

	(A)	(B)	(C)	(D)
Engineering	351. 2	333. 9	317. 3	283. 5
Agricultural	120. 5	114. 6	108. 9	97. 3
Socioeconomic	76. 8	72. 9	69. 1	61. 3
Educational	349. 1	333. 2	317. 9	284. 1
Health	149. 9	142. 7	136. 1	121. 6
Total	1, 047. 5	997. 3	949. 3	848. 2

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(A) Derived by method of straight addition of graduating classes to the assumed 1937 distribution of employed specialists.
(B) Derived by method of assumed 2 percent average annual attrition rate using 1937 as a base.
(C) Derived by the method of assumed 4 percent average annual losses using 1937 as a base.
(D) Derived by method of assumed 2 percent average annual losses using 1937 as a base and making a downward adjustment for prewar withdrawal ([illegible]) of professionals from civilian employment (i. e., draft, incarceration, etc.).

TABLE C-10.—*Soviet professional labor force, by field, 1950*

[In thousands]

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Engineering	[illegible]	[illegible]	[illegible]	419. 1	378. 7	427. 6	445. 6
Agricultural	[illegible]	[illegible]	[illegible]	134. 1	127. 1	140. 1	146. 2
Socioeconomic	[illegible]	[illegible]	[illegible]	84. 9	80. 4	88. 4	92. 6
Educational	[illegible]	[illegible]	641. 2	578. 2	567. 5	607. 4	620. 3
Health	[illegible]	274. 3	[illegible]	236. 4	227. 7	249. 1	254. 7
Total	1, [illegible]	1, [illegible]	1, [illegible]	1, 452. 7	1, 381. 4	1, 512. 6	1, 559. 4

(A) Estimated by straight addition of graduating classes to 1937 base.
(B) Estimated by method of 2 percent average annual losses without any adjustment.
(C) Estimated by method of 2 percent average annual losses with assumed 8 percent hypothetical war losses.
(D) Estimated by method of 4 percent average annual losses without any adjustment.
(E) Estimated by method of 4 percent average annual losses with assumed 8 percent hypothetical war losses.
(F) Estimated by method of 2 percent average annual losses with assumed 8 percent hypothetical war losses and with downward adjustment for prewar (1937–40) excessive losses or withdrawals of professionals from civilian labor force.
(G) Estimated at 3 percent average annual losses without any adjustment for either hypothetical war losses or prewar withdrawals.

NOTES.—Out of the set of estimates presented above, the closest match to independently derived total of actually employed number of professionals (table A-4) is given by estimates (C), (F), and (G). None of these matches exactly, but a deviation of 5 to 7 percent between maximal and minimal estimates is a sufficient degree of accuracy when dealing with social statistics of this type.

It was decided to accept one of the minimal estimates (version (F)) as the most likely one (i. e., which takes account of average annual rate of attrition of 2 percent, makes allowance for hypothetical war losses of about 8 percent, and takes account of prewar excessive losses or withdrawals), and figures derived in such a way are regarded as representative of the true situation in 1950.

APPENDIX C-11.—*Checks upon estimates of the size of the Soviet professional labor force, by field, in 1940 and 1950*

The problem of independent checks upon these estimates must be considered in some detail. The estimates ascertaining the total size of the professional

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and semiprofessional labor force or total of either do not require any specific assumptions since there is no problem of definition of specialists on the basis of educational criteria. These checks, as far as totals are concerned, were made all along. Now the problem is of verifying the reliability of estimates for individual occupational fields on the basis of Soviet official pronouncements.

The first check consists of a comparison of official pronouncements concerning the employment of doctors and estimates derived for the health field segment. This procedure is as follows. It was stated that in 1951 (*Pravda*, April 17, 1951 (Itogi 1946–50)) the number of physicians employed in the national economy increased by 75 percent between 1940 and 1950. If we take the unadjusted 1940 estimate (136,000) and apply the percentage increase, we obtain 238,000 for 1950. If we take the adjusted-for-1937–40-excessive-losses figure (121,000), we obtain 213,000 for 1950. If, finally, we take the 1940 *actual* figure of the number of physicians employed given as 130,400 (*BSE–SSSR*, column 1178) and apply the percentage increase, we obtain 229,000 for 1950. The figures which were derived by estimates (on the basis of graduation trends) were in the neighborhood of 250,000, or some 20,000 in excess of the figure reconstructed on the basis of the independent official pronouncements.

Another source (Koshelev, *Pod'yem* . . ., p. 40) reveals the 1940 to 1950 relationship of engineers employed. It states that during this period the total number of engineers employed in the national economy increased by 43 percent. Consequently, assuming the 1940 adjusted estimate (283,500), we obtain 433,700 for 1950. Assuming the unadjusted figure for 1940 (317,300), we obtain 453,700 for 1950. The figure derived on the basis of annual graduations for the same period is about 430,000. The difference is within reasonable limits of errors and uncertainties involved in estimating procedures based on rounded percentages and relying upon hypothetical constructs of one sort or another.

The same source (Koshelev, *Pod'yem* . . ., p. 40) reveals the relationship between actually employed agricultural specialists in 1940 and 1950. The number of actually employed agricultural field professionals between these 2 years increased by 53 percent. Assuming the 1940 figure as 97,300, we obtain for 1950 148,800 agricultural field professionals, which is only slightly above our estimate on the basis of graduation trends (140,000).

All these checks reveal that the use of data concerning graduates from professional higher educational establishments can be employed for postwar period estimates of the occupational composition of the Soviet professional labor force and that the set of assumptions under which the estimates were made are substantially correct. The assumption of limited transfer from one occupation into another in particular seems to be valid.

Thus, to sum up, it appears that the composition of the Soviet professional labor force in 2 selected years (1940 and 1950) can be ascertained and verified with a sufficient degree of reliability (5 to 7 percent deviation, depending upon the assumptions employed in the estimating procedure). Consequently it was assumed that the occupational composition of the Soviet professional labor force in the 2 selected years was as follows:

	In thousands	
Professionals with completed higher education by field	*1940*	*1950*
Engineering	283. 5	427. 6
Agriculture	97. 3	140. 1
Socioeconomic	61. 7	88. 4
Education	284. 1	607. 4
Health	121. 6	249. 1
All fields	848. 2	1, 512. 6

As was already observed, this 1950 total (1,512,600) differs slightly from that which was derived in table A-6 (1,573,000). In this connection it should be noted that the discrepancies observed are partly due to the exclusion of extension training students from distribution by field.

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TABLE C-12.—*Soviet professional labor force, by field, 1950–54*

[All figures in thousands]

	1950	*1951*	*1952*	*1953*	*1954*
Engineering	427.6	447.3	467.6	498.2	541.2
Agriculture	140.1	149.0	160.7	174.5	189.0
Socioeconomic	88.4	98.4	109.2	119.0	124.6
Education	607.4	674.5	748.3	803.3	857.2
Health	249.1	264.1	290.8	305.9	323.7
All fields	1,512.6	1,633.3	1,776.6	1,900.9	2,035.7
Total, adjusted to include extension graduates		1,680.0	1,864.0	2,027.0	2,218.0

Notes and checks

These estimates are derived by the method of assumed 2 percent average annual losses using 1950 as a base. The assumption is made that the 1950 distribution of professionals by field derived earlier (tables C-10, C-11) is essentially a correct estimate.

Prior to 1950, exclusion of extension students from totals does not lead to any appreciable error. After 1950, however, extension training graduates must be included. This is done by adding extension training graduates to the total derived on the basis of estimates for individual fields.

Further checks upon these estimates are essential. In the first place, as was already indicated (table A-7), the total size of the professional labor force can be checked. Assuming 1940 as 850,000, we obtain 1953 (220 percent increase between 1940 and 1953, *VVSh*, No. 10, 1954, p. 1) as 1,870,000, against the estimate made above of about 1,900,000 (excluding extension graduates).

The same source (*VVSh*, No. 10, 1954, p. 1) reveals that the number of engineers with completed higher education actually employed in the national economy increased by 80 percent between 1940 and 1953. Consequently, using the 1940 figure of 283,500, we obtain for 1953 the actual number of engineers employed in the national economy as 510,300, against the estimate made above of 498,200.

It was stated (Beriya speech at 19th CP Congress, [L. Gruliow, ed.] *Current Soviet Policies*, 1953, p. 164) that the number of physicians in the fall of 1952 was about 300,000, which differs from the figure above by some 10,000. However, it was also stated (*Partiinaya Zhizn'*, No. 10, 1954 [statement of Vice Minister of Health Kochergin]) that "nowadays" (one is not sure if this refers to 1952 or 1953, but 1952 seems more likely) there are 277,000 physicians and 19,200 dentists, which totals to 296,200, employed in the U. S. S. R.

TABLE C-13.—*Soviet semiprofessional labor force, by field, 1940*

	(A)	(B)	(C)	(D)
Engineering	484.3	459.8	436.4	413.5
Agriculture	222.5	212.2	203.5	191.7
Socioeconomic	206.1	194.8	183.9	174.9
Education	723.0	688.5	655.3	618.9
Health	428.8	412.2	396.2	370.6
Total	2,065.7	1,968.5	1,875.3	1,769.6

(A) Derived by the method of straight addition of graduating classes to the assumed 1937 distribution of employed specialists.

(B) Derived by method of assumed 3 percent average annual attrition rate, using 1937 as a base.

(C) Derived by the method of assumed 4 percent average annual losses, using 1937 as a base.

(D) Derived by the method of assumed 3 percent average annual losses, using 1937 as a base and making a downward adjustment for prewar withdrawal ([illegible]) of semiprofessionals from civilian employment (i. e., draft, incarceration, etc.). It must be noted that, despite this adjustment, the total (1,769,600) is still about 70,000 above the estimated total semiprofessional labor force (tables A-4 and [illegible]). No adjustment was made to account for this difference, since such an adjustment would require further assumptions (i. e., another set of assumptions different from those used in estimation of the professional labor force), and this would complicate even further the estimating technique adopted.

Furthermore, it is essential to bear in mind that annual graduation data for the war years for semiprofessionals are lacking, and therefore any estimates of the semiprofessional labor force by field for the postwar years lack the refinement and reliability of estimates for professionals (for further details, see notes to table [illegible]).

NOTE.—This table and the subsequent tables were incorporated into this appendix mainly for checking purposes, and the reliability of estimates of distribution of semiprofessionals by field is hampered by lack of information.

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TABLE C-14.—*Soviet semiprofessional labor force, by field, 1950*

	(A)	(B)	(C)	(D)
Engineering	917.3	834.3	795.7	749.4
Agriculture	482.5	423.9	406.9	385.4
Socioeconomic	422.1	364.8	369.2	349.3
Education	1,181.0	986.6	931.6	862.0
Health	873.8	747.2	714.2	672.6
Total	3,876.7	3,356.8	3,217.6	3,018.7

(A) Estimated by straight addition of graduating classes to 1937 base.
(B) Estimated by method of assumed 3 percent average annual losses without any adjustment.
(C) Estimated by method of assumed 3 percent average annual losses with assumed 6 percent hypothetical war losses.
(D) Estimated by method of assumed 3 percent average annual losses with assumed 6 percent hypothetical war losses and with downward adjustment for prewar (1937–40) excessive losses or withdrawals of semiprofessionals from the civilian labor force.

NOTES.—From the very onset it must be stressed that because of the lacunae of data in regard to annual graduations of semiprofessionals by field during the war, the estimate for 1950 was derived on the basis of a projection of prewar (1938–40) distribution of graduates by field upon graduations during the war years (see notes to table B-1 above). This procedure undoubtedly results in errors, the extent of which cannot be assessed in any meaningful way. As far as the total semiprofessional labor force is concerned, there is a close match of estimates of versions C and D with the total obtained above (tables A-6 and C-7). Although there is no way of checking these estimates for 1950, there is one check available for 1952, and therefore the estimates have been carried one step further in the next table.

TABLE C-15.—*Soviet semiprofessional labor force, by field, 1950–54*

	1950	*1951*	*1952*	*1953*	*1954*
Engineering	749.4	801.8	853.2		
Agriculture	385.4	416.3	446.5		
Socioeconomic	349.3	382.3	412.5		
Education	862.0	904.8	944.7		
Health	672.6	711.4	749.1		
Total	3,018.7	3,196.6	3,406.0	3,626.0	3,865.0

NOTES.—These estimates were derived, because of gaps in data, by projecting the distribution of technicum graduates in 1946–50 upon graduates in 1951 and 1952. There is no other way of obtaining distribution of graduating classes by field.

It must be strongly emphasized that 1950–52 distributions of semiprofessionals by field were obtained on the basis of procedures (both for the war years and for the 1951–52 period) which assumed that a certain trend in graduations prevailed. This assumption was already questioned in earlier notes. The problem consists now, however, in trying to make some independent check.

As far as the total size of the semiprofessional labor force for 1952 is concerned, it appears that it is somewhat below the estimate in table A-7 above by some 150,000.

The only other check available is the statement that in 1952 the trained semiprofessional medical personnel consisted of 738,000 persons (*Partiinaya Zhizn'*, No. 10, 1954), which is close to the estimate presented in this table.

Though there is great uncertainty about these estimates, they are perhaps the best one can obtain considering the lacunae of data.

In conclusion, it must be noted that the semiprofessional labor force either experienced somewhat smaller losses during the war or postwar period, or that "upgrading" of semiprofessionals was again practiced (as in the early 1930's) on a large scale. The importance of the estimates lies in the fact that they give at least some idea of the probable distribution by field of trained semiprofessionals in the Soviet Union.

150 per cent average increase in production; this had been about two-thirds 433
realized by 1932. The Second Plan had striven for a 200 per cent increase 175
and had been almost three-fourths fulfilled by 1937. The Third Plan had 185
aimed at only 75 per cent increase and its operation had been cut short by war with Germany; achievement by 1940 had been very poor, except in terms of coal and electric power. Despite remarkable advances, per capita production in 1937 was still only a small fraction as compared with that of Western nations.

Nevertheless the success of the device cannot be the subject of doubt. 511
The prewar tempo of industrialization was resumed, at the very time that 175
the outside world was passing through an extremely severe depression.
The material standard of living of the masses seems to have followed much 433
the same course in Russia as in the outside world, falling heavily until 1932, 464
then rising again until 1937. Yet all the time the curve of production rose, and rigid adherence to the formula "He who does not work does not eat" banished the dread specter of unemployment. Dissatisfaction with working conditions resulted in a labor turnover on a scale alarming even for Russia, but the need to find employment made it possible to secure labor even in such remote and unattractive areas as Magnitogorsk and Kuznetsk, while the method of political reëducation of recalcitrant peasants provided a labor force for certain enterprises unable to attract free labor.

The idea of state-run "grain and meat factories" was abandoned. Some 175
State farms were retained as experimental stations, but the collective farms 433
became the chief vehicle of agricultural production. An unforeseen but
highly effective means of increasing and controlling production was found 461
in the Machine Tractor Stations. Similarly, in industry, Stakhanovism developed as an improved means of stimulation to greater effort. Both in agriculture and in industry piece-work wages became almost the universal rule. In the revised Constitution (1936) appeared a radically modified version of the time-honored communist slogan: "From each according to
his ability, to each according to his work." In the trade unions were vig- [467]
orously stamped out the last remnants of the "bourgeois" notion that it is the function of the trade union to advance the interest of the worker as against the employer. Instead, the trade unions, defined as "schools of communism," were charged with the duty of increasing the productivity of labor; at the same time, to maintain their hold over the masses, they were entrusted with administration of all social insurance benefits.

Soviet Constitutions

The tremendous growth of economic activity in Russia found little re- 178
flection in the political structure of the country. The rapid industrialization

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obligation to work for four years at the place to which they have been directed) and they may not be placed in a lower tariff class (see p. 31) than that given them on passing their examination. They may be directed only to places where suitable accommodation is to be had.

The *Soviet Union's Administrative Law* (published 1950) gives the following details of the regulations for recruiting pupils for the occupational schools: for every hundred male and female members of collective farms between the ages of 14 and 55 the president of an agricultural collective must each year by calling-up order (mobilization) select two persons between the ages of 14 and 17 for artisan and railway schools, and two persons beween the ages of 16 and 18 for factory- and workshop-schools. The town soviets are similarly to select young persons for the artisan-, railway-, factory- and workshop-schools, the number being fixed annually by the Council of Ministers (*cf.* p. 172).

According to the Five-Year Plan, four and a half million young qualified workers were to be trained at the schools for 'labour reserves' during the years 1946–1950. According to the statistical report of the Central Administration some 2,900,000 young workers were trained during 1946–1949 and in 1950 494,000, and were placed in industry, building and transport.

Mobility in the Labour Market

● 464 By making use of the legislation that has just been sketched, the central authorities have been able to direct certain categories of workers and employees to different undertakings. At the same time the undertakings have been able to engage labour without the agency of the authorities. Vacant positions have been advertised in the Press, on hoardings, etc. Latterly there have often been complaints over the 'over-mobility' (*tekuchest*) of labour in the Press and other publications. As an example, here is an extract from an article by E. Mochova on labour reserves: 'The facts show that the chief causes of over-mobility among the young workers, which in many cases has not yet been overcome, are to be found in the fact that these young workers' services are not properly made use of and that sufficient attention is not paid to their material living conditions. Workers' over-mobility involves the state in huge losses, prevents a planned distribution of labour and acts as a brake on increased production. For these reasons the economic leaders, the party, komsomol and trade organizations must devote the maximum of care to the young workers. First and foremost must they be helped to learn how to master the output norms. . . .' 464

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Chapter One

GROWTH AND TRANSFORMATION OF THE WORKING CLASS

Distinctive Traits of Russian Labor.—Employment Figures until 1928.—The First Five-Year Plan: Project and Achievement.—Rural Overpopulation and Collectivization of Agriculture.—Collectivization of Agriculture and the Urban Labor Market.—Urbanization Trends.—Working Class Growth, 1932-1941.—The Working Class in the War and Postwar Years.—APPENDIX: Statistical Materials on the Working Class.

Distinctive Traits of Russian Labor

565 ● 464 In most continental European countries it was the city people, mainly artisans and other urban groups, whose proletarianization produced the industrial working class. By origin and by tradition, the latter was a predominantly urban social stratum. New-comers from the countryside kept swelling the ranks of industrial labor all over Europe, but in most cases this influx was quickly assimilated by the city. The rural ties of the migrants loosened rapidly. The children of the country-bred new industrial workers retained hardlly a trace of their peasant background.

This is the vital difference between the evolution of labor in Russia and the rest of Europe. In Russia the city as such, and urban handicraft in particular, had never risen to levels comparable to the flowering of urban civilization in Western and Central [566] Europe. Russian industry originated in the country, and until 1861, when serfdom was abolished, much of its labor was done by peasant serfs. Even after it invaded the cities it drew the bulk of the needed manpower from the ranks of the rural populace.

Until quite recently a vast majority of Russian industrial

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565 workers was not only of peasant stock but closely linked with 964 the countryside. The continuing bond was not only psychological, resting on family ties as elsewhere in Europe; there also were economic ties, and precisely these were of profound importance. The industrial worker in the city often kept a farm in his native village, and had it run by the women, children, and old men of his family. Very often, too, he would go back to the village himself, tilling his soil for weeks and even months, and then return to the factory after the harvest.

This close connection of urban workers with the farm led many Russian economists and sociologists for a long time simply to deny the existence of a Russian industrial working class.

As late as the 1890's this skepticism was widespread. An outstanding pioneer in the study of labor conditions, E. M. Dement'yev, wrote in 1893: "From olden times the opinion has crystallized in our literature that our factory workers are simply peasants who eke out the scanty income they derive from agriculture by supplementary work in factories; and all statistical and economic investigations for the province of Moscow have hitherto regarded factory work of peasants as a sideline."[1] Dr. Dement'yev opposed this obsolete view on the basis of a survey he had conducted in the 1880's in three counties of Moscow province, on behalf of the Moscow Zemstvo (provincial self-government).

But the ties which bound industrial workers to village and homestead remained close. Dr. Dement'yev himself pointed out that 91.5 per cent of the factory workers covered by his survey were legally members of the peasantry,[2] and that 14.1 per cent of all workers over eighteen years of age would return regularly to do farm work in their native village.[3]

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[1] E. M. Dement'yev, *The Factory, What It Gives the Population and What It Takes Away*, 2d ed., Moscow, 1897, p. 1.

[64] [2] In Tsarist Russia, individual citizens were legally bound to "estates," which implied privileges for the upper classes and restrictions for the lower ones, particularly the peasantry. Until 1917, when the institution was fully abolished, urban workers who came from the country had remained legally peasants for a long time.

[3] *Op. cit.*, pp. 4 and 18. A recent Russian work on the origin of the Russian industrial working class rightly emphasizes that Dement'yev's figures fail to make the rural connection of industrial labor fully apparent:

"In analyzing these figures, it must be taken into account that the survey was made during a crisis, as a result of which only groups of workers most closely tied

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In other provinces the workers' connection with the rural economy was even closer. Official figures issued for 1893 on the nine factory inspection districts placed the proportion of factory workers periodically returning to the villages for farm work at 28.2 per cent.[4] There were wide fluctuations from industry to industry; according to the same statistics, the seasonal migration quota ranged from 11.1 per cent in the metal trades to 65.4 per cent in the processing of food and beverages.[5] 565 464● 166

How much the rural economy meant to industrial workers is not fully expressed by the numbers returning seasonally to work in the fields. It can be seen better from a survey made in a large Moscow textile factory in 1898.[6] Of 2,555 workers employed there, 1,417 (all male) were thoroughly interviewed. 94.2 per cent turned out to be of peasant stock. The following figures reveal their specific rural interests: 464 166

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to production remained in the factories." (A. G. Rashin, *The Formation of the Industrial Proletariat in Russia*, Moscow, 1940, p. 405.)

[4] Data of factory inspectors supplied by A. V. Pogozhev, *Establishing the Magnitude and Distribution of Russia's Workers' Population*, published by the Academy of Sciences, St. Petersburg, 1906, p. 101. The following table indicates the regional distribution, St. Petersburg and the more highly developed Polish districts showing the least "agricultural residues" among industrial workers:

District	*Percent returning to the villages for agricultural labor*
Voronezh	76.5%
Kiev	57.5
Kharkov	51.8
Vladimir	19.8
Moscow	19.5
Warsaw	17.1
Piotrkow	14.7
Vilna	10.4
St. Petersburg	10.8
Average 9 factory inspection districts	28.2%

[5] Data from Pogozhev, as quoted *supra*, n. 4, p. 100. Percentage oscillations by industries were as follows:

Industry	*Percentage returning*
Metal trades	11.1%
Textiles	18.5
Lumber	30.3
Processing of minerals	35.4
Processing of animal produce	48.1
Food and beverages	65.4

[6] V. Shestakov, *The Workers of the Emil Zindel Factory*, Moscow, 1900, quoted from M. Tugan-Baranovsky, *The Russian Factory, Past and Present*, vol. 1, 3d ed., St. Petersburg, 1907, p. 448.

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Return to village for seasonal work in their own fields	11.9%
Do not return, having relatives till fields	61.4
Do not farm for themselves, leasing fields	12.3
Own no fields but keep a village homestead	3.6
Without village connections	10.8
Total	100.0%

Here the proportion of workers who still had ties with the rural economy was as high as 89.2 per cent, many times the number of those returning to the village to lend a hand in the fields.

With the growth of industry, especially since that last decade of the nineteenth century, these ties were gradually severed in spite of the laws that held factory workers bound to the "peasant estate." The break was especially open among workers in the metal trades, and even more so in printing. Yet even the printers often remained linked with the farm.

According to a survey made by the Moscow printers union in 1907, 46.0 per cent of all workers employed in Moscow print shops had fields which they tilled themselves or through family labor (mostly the latter); an additional 16.4 per cent leased the fields or kept at least a homestead in their native village. Only 37.6 per cent had cut all property ties with the rural economy. Of all the workers covered by the survey, 65 per cent had been born on farms.[7]

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Hardly any comparable figures are available for the years following World War I.[8] Industrial labor moved farther from its

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[7] A. Svavitsky and V. Sher, *The Condition of Workers in the Moscow Printing Industry*, St. Petersburg, 1909, pp. 5 f.

[8] In this context mention ought to be made of the industrial labor census of 1918, when the workers among other things were asked about their pre-revolutionary connection with agriculture. The results have to be used with caution, however—not only because the questions concerned the past and the answers were accordingly less reliable. A fact of much more profound influence on the survey was that the workers' flight from the factories to the land (due to the disruption of the urban economy and to the agragrian revolution in the country) had set in many months before the census. The rural ties of the remaining part were scarcely representative of industrial labor on the threshold of the revolution. Altogether, out of nearly a million workers whose replies were statistically evaluated, 31.3 per cent said they had owned rural property before the revolution, and two-thirds of these (20.9 per cent) had operated farms, tilling the soil in person or through family labor.

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These figures are far too low to correspond with reality just before the revolu-

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farm background, yet strong country connections remained even 464
after 1917. They accounted for the mass exodus of urban workers 166
between 1918 and 1921 and exerted a decisive influence on the trend of unemployment during the first revolutionary years as well as in the later period, between 1922 and 1928.

The trend of industrial manpower in the first revolutionary decade cannot be understood unless it is seen in terms of the rural background of a large proportion of industrial workers. Though industrial employment decreased sharply between 1918 and 1921, there was no visible unemployment. On the contrary, there was a noticeable tightening of the labor market. Conversely, the beginning of industrial recovery and reconstruction in 1922 brought a steady increase in the number of employed along with a considerable increase in the number of unemployed.[*]

Employment Figures until 1928

The first years of the revolution saw a disastrous contraction 464
of the entire economy, particularly of industry. There was an abrupt decrease in the number of employed. Though the nadir of economic decline was reached in the first half of 1921, the shrinkage of employment continued even after the economic policy was reversed with the introduction of the NEP (New Economic Policy). Employers who hitherto, for one reason or another, had hesitated to discharge superfluous workers, did so now, in keeping with the reestablished principles of commercial accounting.

The low point of industrial employment was not reached

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tion. Yet the survey retains a certain significance as an illustration of the relative 464
rural ties of the workers in different branches of industry. If we assume that farms
were operated by 20.9 per cent of industrial labor as a whole, we find that the 166
corresponding figure was 38.7 per cent among the miners, 29.2 per cent among the 427
food workers, 26 per cent in the linen industry, 21 per cent among the metal workers, 20.4 per cent in the cotton industry, 19.6 per cent in the lumber industry, and 9.6 per cent in the graphic arts.

The results of this census were published in Russian in *Industry 1913-18. Part Two, Occupational Census* by the Central Statistical Administration, Moscow, 1926. For a comprehensive summary of the results, see A. G. Rashin (cf. note 3), pp. 412-415.

[*] Cf. my articles "Bevölkerungsbewegung und Arbeitslosigkeit in Russland," *Die Gesellschaft*, Berlin, February 1927; "Unemployment in Russia, 1917 to 1925," *International Labour Review*, November 1926; and "The Five-Year Plan and the Regulation of the Labour Market in the U.S.S.R.," *International Labour Review*, March 1930.

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464 until the summer of 1922. It was only after this time that employment in industry and other economic fields rose steadily.

162 464 Some figures may illuminate this trend. The last census of Tsarist Russia, held on February 2, 1897, revealed that, out of a total population of approximately 126,400,000, some 10,500,000 were wage and salary earners (including civil servants but excluding the military). This figure must be corrected to make allowances for the territorial reduction of Russia after World War I; within the borders of the Soviet Union prior to World War II, the number of wage and salary earners in 1897 would have been about 7,900,000 out of a total population of about 104,000,000. For 1913 the corresponding figure (after territorial allowances) has been estimated at 11,200,000, out of a total population of some 140,000,000. But in 1921/22,[10] the number of wage and salary earners[11] had fallen far below the level of 1913, indeed below that of 1897, to about 6,500,000 in a population of approximately 135,000,000.[12]

Conditions in industry proper were worse. Industry (not including handicraft and home workers) employed the following numbers:[13]

1897	1,515,000
1913	2,552,000
1921/22[14]	1,243,000

From the summer of 1922 on, the number of wage and salary earners in the national economy in general and in industry in

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[10] Soviet statistics during the first revolutionary decade were not based on calendar years. Data usually refer to the "economic year" ending September 30.

[11] Data from B. Gukhman, *The Size of the Proletariat and Wages in the USSR*, Moscow, 1926, p. 29.

[12] The number of wage and salary earners in all fields of economic activity for the economic year 1921-22 was never officially released. Such figures are available only since 1922-23, at which time there were 6,800,000. However, the number of wage earners in industry for both years is ascertainable. It was 1,243,400 in 1921-22; 1,445,900 in 1922-23, an increase of 202,500 (data from Gukhman, as quoted *supra*, n. 11, p. 75). The total number of wage and salary earners in all fields of economic activity in 1921-22 may thus be estimated as somewhat less than 6,500,000.

[13] Gukhman, as quoted *supra*, n. 11, pp. 13, 74.

[14] The lowest monthly employment figures were recorded in July, August and September, 1922. The employment trend can be seen from a comparison with the corresponding months of 1921 and 1923 (data from Gukhman, as quoted *supra*, n. 11, pp. 74 ff.):

	1921	*1922*	*1923*
		(in thousands)	
July	1,295	1,191	1,563
August	1,306	1,181	1,559
September	1,255	1,209	1,498

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particular increased continuously. In 1928 the total in all occupational divisions was 11,600,000,[15] for the first time surpassing the 1913 figures. However, the population as a whole had grown rapidly. In 1928 it approximated 151,000,000[16] as against 140,000,000 in 1913. Out of each 1,000 inhabitants, 76.8 were employed as wage or salary earners in 1928. This compares with a ratio of 80.0 in 1913, and of 76.0 in 1897. 464 162

The trend was slightly more favorable with respect to manual labor in industry proper (excluding handicraft, home workers, and salaried employees):

Wage Earners in Industry[17]

1897	1,515,000
1913	2,552,000
1928	2,822,000

On the other hand, the number of farm workers dropped considerably over the same period of years, as a result of the agrarian revolution.[18]

It took six years (1922-1928) to restore the working class (statistically speaking, wage and salary earners in all occupational divisions) to the size it had attained prior to World War I. When the Five-Year-Plan policy of speedy industrialization was put into effect, the pace increased rapidly.

The First Five-Year Plan: Project and Achievement

The First Five-Year Plan, as adopted by the Sixteenth Communist Party Conference in April, 1929, was to run from October 1, 1928, to September 30, 1933. Actually it ran its course in less than five years, and was proclaimed to have been completed by December 31, 1932. It was designed to bring about a vast expansion of national production, especially of industrial output. Accordingly, it envisioned a large increase in the number of workers and employees. 185 464

However, the authors of the Plan displayed some caution in

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[15] *Socialist Construction of the USSR. Statistical Yearbook*, Moscow, 1936, p. 508.

[16] *Five-Year Plan of Economic Construction of the USSR*, Moscow, 1929, vol. II, 2, p. 163.

[17] Data for 1897 and 1913 from Gukhman, as quoted *supra*, n. 11, p. 29; for 1928, from *Socialist Construction* . . . as quoted *supra*, n. 15, p. 508.

[18] Agricultural laborers numbered approximately 2,775,000 in 1897, 3,000,000 in 1913, and 2,007,000 in 1928, according to sources indicated in n. 17 *supra*.

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mapping out the growth of the working class. The projected increase was to be slower than the actual one in the five years preceding the Five-Year Plan, as can be seen from the following table:[19]

Year	*Number of Employed (in millions)*	*Increase over Preceding year*
	Past Development	
1922/23	6.8	...
1923/24	7.6	11.1%
1924/25	8.5	13.0
1925/26	10.2	19.8
1926/27	11.0	7.8
1927/28	11.3	3.7
	Five-Year Plan Schedule	
1928/29	11.9	4.9
1929/30	12.8	7.5
1930/31	13.8	7.7
1931/32	14.7	7.0
1932/33	15.6	6.9

The relatively moderate pace indicated in these figures for the projected increase in employment was clearly underscored by the authors of the Plan themselves. They wrote:[20]

> "The increase in the number of wage and salary earners, as provided for in the Plan, is relatively moderate as compared with the preceding five years, during which the yearly increases in the number of workers and salaried employees averaged 11 to 12 per cent and the total increase for the period equaled 70 per cent. It is necessary to take into consideration, however, that the growth of the working class during the reconstruction years profited chiefly from the opportunity to use existing plant, while new investment was relatively small; that is to say, this growth took place on the old basis of production. Conversely, employment in the coming five-year period will increase through addition of new, more efficient plant.
>
> "The numerical change in the employment of wage and salary earners, as it is to take place from one year to the other, shows an increase in pace in 1929/30 and a somewhat slowed-up development during the following years. The increase in the

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[19] *Five-Year Plan* . . ., as quoted *supra*, n. 18, vol. I, p. 129.
[20] *Op. cit.*, vol. II, 2, pp. 165 f.

> number of wage and salary earners during the five-year period will average about 6 per cent annually."

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Altogether, the number of employed was to rise from approximately 11,300,000 in 1927/28 to 15,800,000 in 1932/33,—a total increase of some 4,500,000 or 38.9 per cent.

However, the number of wage and salary earners in the national economy as a whole approximated 22,800,000 in the calendar year 1932, as against the 15,800,000 envisioned for the economic year 1932/33. In less than five years labor more than doubled its size. In industry proper, the figure attained in 1932 was approximately 6,300,000. This compares with 3,106,000 in 1928 and an estimated 4,100,000 for the economic year 1932/33 according to the Five-Year Plan.[21]

The official report on the execution of the First Five-Year Plan summarized the facts as follows: [22]

> "From 1928 to 1932 a total of about 12,500,000 new wage and salary earners were drawn into all occupational divisions (including 1,300,000 who replaced those eliminated by death, disability, or assignment to study). According to preliminary estimates this increase was derived from the following sources: About 4,000,000 were city dwellers working for wages for the first time (viz., 1,700,000 adolescents, some 500,000 college graduates, 1,400,000 adult women not previously engaged in production, and about 400,000 former artisans and home workers). The remaining 8,500,000 were peasants."

The number of newly-employed workers manifestly exceeded the manpower reserves available at the beginning of the Five-Year Plan.[23] This would have been impossible but for the tremendous influx of new workers from the villages. In the second half of the five-year period, however, this tide began visibly to recede. The rural manpower reserves were not exhausted, rather the contrary. But in the meantime something new and decisive had happened to the agrarian economy. The collectivization of

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[21] *Fulfilling the First Five-Year Plan for the Economic Development of the USSR*, Moscow, 1933. pp. 253 f., 267. Later the figures for 1932 were slightly revised upward. According to *Socialist Construction* . . ., as quoted *supra*, n. 15, p. 508, the total number of wage and salary earners was estimated at 22,900,000 and the corresponding figure for industry proper at 6,500,000.

[22] *Fulfilling* . . ., as quoted *supra*, n. 21, p. 174.

[23] For the development of unemployment, cf. Chapter Two below.

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185 agriculture, which put a new complexion on the labor market,
464 had begun.

Rural Overpopulation and Collectivization of Agriculture

161 403 369 The effects of the collectivization of agriculture on the labor market are closely interwoven with the age-old crux of Russia's rural economy: rural overpopulation. For many decades it was one of the central issues of the country's social evolution. Due to the limited absorptive capacity of an underdeveloped industry, the population surplus on the farms had become quasi-permanent.

The agrarian revolution did not basically change matters. The big landowners were expropriated, and their lands largely distributed among the peasants, but as the bulk of the land had been in peasant hands even before the revolution, this did not solve the real agrarian problem, the question of "land hunger." The results of the redistribution of land, the People's Commissariat for Agriculture reported in 1920, were "much less than many had anticipated."[24]

Reviewing achievements during the first three years of the Revolution (1917-1920), the People's Commissariat explained:[25] "Small indeed were the results of distributing a giant acreage among the millions of peasants. A special survey by the Central Agricultural Board has found that the *per capita* increase of peasant acreage is very small, amounting to a few tenths or hundredths of a desyatine.[26] In a vast majority of provinces the additional acreage did not exceed half a desyatine; and only in a few did it reach one desyatine."

According to official figures, the average size of peasant holdings in 29 provinces of European Russia rose from 1.67 to 2.26 desyatines *per capita* of the peasant population.[27] The actual increase was even less impressive, for a portion of the newly acquired land had already been tenanted by the peasants prior to the revolution.

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[24] B. N. Knipovich, *Summary of Three Years' Activity (1917-1920) of the People's Commissariat for Agriculture*, issued by the People's Commissariat for Agriculture, Moscow, 1920, p. 9.

[25] *Ibid.*

[26] One desyatine is equivalent to 1.093 hectares=2.6997 acres.

[27] From data cited in the Russian-language publication by S. N. Prokopovicz, *Studies in Soviet Economy*, Berlin, 1923, p. 70.

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Thus the redistribution of land could do little to ease the pressure of rual overpopulation. Whatever slight improvement there was, was largely offset by a new migration from the cities to the country that began in the first year of the Revolution, and by the damage that war and civil war had inflicted on agriculture. The density of the rural population remained menacing. It had actually grown in comparison with prewar days, as shown by the following table:[18]

Male Adult Farm Workers
Per 100 Desyatines of Arable Land

Region	*1913*	*1923*	*Ratio 1923:1913*
Western	10.5	13.9	1.32
Northwestern	14.4	13.8	.96
Central Industrial	11.0	18.7	1.70
Northeastern	11.1	15.6	1.41
Wyatka-Vetluga	10.1	11.7	1.16
Ural	7.2	8.7	1.21
Central Agrarian	13.5	15.4	1.14
Middle Volga	10.8	12.3	1.14
Lower Volga	6.9	7.5	1.09
Crimea	3.4	3.9	1.15

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The change in ownership did nothing to change the fact that the numbers of employables working on farms exceeded that required for cultivation. On the basis of rural tax returns for 1924/25, N. Organovsky, an authority on farm statistics, showed that the per capita amount of work accomplished increases with the size of the farm. The acreage planted per person was as follows:

Size of Farm	*Desyatines Planted per Person*
Small (up to 4 desyatines)	0.58
Lower medium (4 to 8 desyatines)	1.38
Upper medium (8 to 15 desyatines)	2.13
Large (more than 15 desyatines)	3.56
All brackets	1.42

Oganovsky commented:[19]

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[18] Data from N. Kondrat'yev and N. Oganovsky, *The Outlook for the Development of Agriculture in the Soviet Union*, issued by the People's Commissariat for Agriculture, Moscow, 1924, p. 122.

[19] N. Oganovsky, "Results of the Agrarian Revolution and Recent Differentiation Trends within the Peasantry," *Planovoye Khozyaistvo*, May, 1925, pp. 55 f.

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> "If the small farmers could utilize their working capacity as efficiently as the lower medium farmers, the labor of 57 per cent of the former would be superfluous; if working efficiency in the lowest bracket could be increased to the level of the upper medium group, the proportion of unusable manpower among the small farmers would amount to 73 per cent. Now, the total available manpower in the small-farmer category throughout the Soviet Union amounts to 13,100,000. Consequently, in the small-farmer category, on the basis of the productivity of labor in the lower medium bracket, the number of persons employed in excess of requirements totals 7,500,000; computed on the basis of the degree of productivity characteristic of the upper medium bracket, it would come to 9,600,000. In addition, using this latter ratio, the number of persons employed in excess of requirements in the lower-medium category may be calculated at 10,300,000. This would bring the total unusable manpower up to 19,900,000, or 43 per cent of the manpower in the villages of the Soviet Union."

Though the data on which these computations were based may not have been wholly accurate, the general picture was true. The extent of rural overpopulation in the Soviet Union was enormous.

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For the moment, migrations to the city could hardly be expected to bring relief. Not only did the rural population overbalance the urban one; there also was its high rate of natural increase. It was not until the middle 1930's that the cities had grown enough to absorb at least the natural rural population increase in the course of their further expansion, lessening the overcrowding on the farms.

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This was still far off when the Five-Year Plan era began. In percentage, the First Five-Year Plan foresaw a relatively slight increase in the size of the rural population: 9.0 per cent in five years, as against a 24.4 per cent increase in the cities. In absolute figures, however, the rural increase thus envisioned considerably exceeded that planned for the cities. The rural population was to grow by 11,100,000, as against 6,800,000 for the urban one.[20] The actual development was different. It was deeply influenced

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[20] The rural population was seen increasing from 123,900,000 in 1927-28 to 134,900,000 in 1932-33, while the urban population was expected to advance during the same time from 27,600,000 to 34,700,000. (Data from *Five-Year Plan . . .*, as quoted *supra*, n. 16, vol. I, p. 129.)

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241 461 654 conditions being equal, the expenditure of labor per unit of acreage is less on collective farms than in independent peasant holdings: large-scale farming favors labor-saving division of work.

This was clearly shown by an investigation which the *Kolkhoz* Center (an agency operating under the People's Commissariat for Agriculture) conducted in 1930 in four districts of the Ukraine, North Caucasus, the Central Black-Soil Area, and Siberia. Collective farms using larger-sized equipment unknown to the small peasant farmer were excluded, to eliminate differences in the level of mechanization. In terms of man-days of male adults per hectare of planted acreage, expenditure of labor was as follows:[29]

	Fall Planting		*Spring Planting*	
	Collective Farms	*Independent Peasant Farms*	*Collective Farms*	*Independent Peasant Farms*
Ukraine	5.31	7.89	...	...
North Caucasus	5.61	11.16	5.48	7.80
Central Black-Soil Area	7.22	11.41	7.46	12.25
Siberia	...	...	5.54	16.99

The difference in size alone makes for a considerable saving of labor in collective farming. Introduction of heavy machinery, spurred by collectivization, is another labor-saving device. To determine the expenditure of labor before and after mechanization of the principal phases of agricultural work (cultivation and harvesting), another study was carried out by the *Kolkhoz* Institute (People's Commissariat for Agriculture) in October, 1930. This survey of 68 collective farms scattered all over the country disclosed a labor saving of 48.2 per cent for spring seeds, and of 50.2 per cent for autumn seeds, by means of mechanization.[30]

•464 241 654 Numerous surveys have shown that collective agriculture can use only a fraction of the total available manpower. In 1930 a study of 102 *kolkhozes* revealed that days worked per able-bodied person averaged not more than one hundred a year. Even in August, the busiest month in agricultural work, the number of days worked per able-bodied *kolkhoz* member averaged eighteen in

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[29] I. Reznikov, "Release of Manpower by Collective Farms and the Tasks of Organizing Otkhod," *Na Agrarnom Fronte*, June, 1931, p. 58.

[30] *Op. cit.*, p. 42.

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Bashkiria, fourteen in the North Caucasus and the Leningrad and Western areas, and only eight in the Ivanovo area.[36]

Still less satisfactory was the situation uncovered by other surveys: "A survey by the Research Institute for Large-scale Farming disclosed that in the Volga area only 18.9 per cent of the available manpower was utilized by the *arteli* and 28.7 per cent by the *kommuny;*[37] in the North Caucasus, 18.3 per cent by the former and 38.1 per cent by the latter. According to a comprehensive study undertaken by the *Kolkhoz* Institute in 1930 and based on production plans, less than half the available manpower was used on 31.0 per cent of all collective farms in the Central Black-Soil Region, on 31.6 per cent in the Ukraine, on 25 per cent in the Middle-Volga Area, etc."[38]

As efficiency of work improved with the development of collectivized agriculture, the manpower surplus became more pronounced. Labor expenditures per unit of acreage in a large number of *kolkhozes* under survey in 1933 and 1937 compared as follows:[39]

	Days Worked per Hectare of Grain Acreage		
Area	*1933*	*1937*	*Ratio 1937:1933*
Azov-Black-Sea	8.67	6.96	.803
Voronezh	14.68	10.63	.724
Western Siberia	9.91	8.27	.835
Kalinin	28.43	26.63	.937
White Russia	23.55	19.42	.825
Ukraine	11.32	10.45	.923
Average	12.30	10.55	.856

The figures may not always be reliable in every detail, as the surveys from which they were drawn had the primary purpose of proving the presence of large manpower reserves in the *kolkhoz* organization. Still, they may be assumed to give a correct picture of the basic trend.

There is no doubt that at first the *kolkhozes* could make efficient use of only part of the manpower available in a peasant

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[36] *Op. cit.*, p. 93.

[37] *Arteli* and *kommuny* are different organizational types of collective farms.

[38] A. Libkind, *Agrarian Overpopulation and Collectivization of the Villages*, issued by the Agrarian Institute of the Communist Academy, Moscow, 1931, p. 182.

[39] I. Meriinov, "Productivity of Labor in the *Kolkhozes*," *Planovoye Khozyaistvo*, December, 1939, pp. 142 f.

464 economy. With farming collectivized and mechanized, the total 241 rural labor force capable of economically efficient agricultural 154 employment diminished considerably. Did this not justify the expectation that collectivization would rapidly aggravate the pressure of rural overpopulation and spur migration to the cities?

In fact, developments were much more complicated and led to various contradictory trends.

Collectivization of Agriculture and Urban Labor Market

369 In the early years of forcible collectivization, many millions 166 of peasants left for the city. Eight and a half million workers 464 from the country were absorbed by the urban labor market between 1928 and 1932. Most of them, however, did not come from collective farms. They were cast-offs of the collectivization process: either formerly well-to-do peasants who had been "dekulakized"—expropriated and expelled—or pauperized independents who balked at joining the *kolkhozes.*

Within the "collectivized sector," on the other hand, it soon turned out that collectivization, despite its labor-saving effect, kept farmers from migrating to the city and often made it imperative for industrial workers to return to the villages whence they had come long ago.

The first year of forcible collectivization, 1929/30, already showed the extent to which the urban labor market was upset by the agrarian upheaval. Early in 1930, the newspapers were full of items about the new phenomenon of "flight from the cities." Workers who had remained economically linked with the farm rushed back there, lest they miss out in the agrarian reshuffle.

The greatest number of such reports came from mining districts, where the semi-peasant was a common type. The following dispatches were typical:

> "The mines are being deserted. Miner, construction worker, mechanic, each and every one is off to the country to the *kolkhoz.* What else can you expect? That's where their families are. And whoever stays away from the *kolkhoz* is in danger of being branded a *kulak* by the blundering local officials." [60]
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> "In their administrative zeal the collectivization reformers

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[60] *Za Industrializatsiyu,* March 22, 1930.

> failed to remember that 30 per cent of the miners have farms of their own, and have subjected the families of these miners to so much pressure that their husbands, brothers and fathers are now deluged with letters urging them to come home as soon as possible, to 'save the farm.' In many cases, miners' farms were simply expropriated as *kulak* property and their families refused membership in the *kolkhozes*. It is not surprising that hordes of excited miners have been running for home."[41]

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As a rule, Soviet newspapers confined themselves to attributing the miners' flight from the mines to "blundering" enforcement of collectivization by overzealous officials. But the real cause was a phenomenon far more serious than individual excesses.

Under normal conditions, work in the mines was a customary objective of the so-called "temporary migration"(*otkhod, othkodnichestvo*) of farm labor. Without giving up their farms, peasant families who were not fully employed in agriculture would move temporarily to take industrial or semi-industrial seasonal jobs. The collectivization of agriculture upset the urban labor market peculiarly through its effect on *otkhod*. While increasing the manpower surplus on the farms, it reduced the industrial labor supply which temporary migration had normally provided.

Those peasants who had not yet been forced into *kolkhozes* feared to leave for the city or for temporary work lest absence furnish a pretext for expropriating their farms. Those who had already joined collective farms were even more averse to leaving their villages, because they risked discrimination within the *kolkhoz:* with too many people working on collective farms, there was a tendency to withhold work assignments from families whose sons, brothers or fathers were absent and drew pay from non-farm jobs.

The Soviet press during that period constantly discussed the decrease of *otkhod*. "The ratio of collectivization" was said to be "in inverse proportion to the ratio of *otkhod*." In other words, the farther collectivization progressed, the more the number of those willing to accept permanent or temporary employment in the city dwindled. Figures from several areas may illustrate this "inverse proportion":[42]

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[41] *Trud*, April 15, 1930.

[42] Ye. Bronshtein, "The Manpower Issue in the Third Year of the Five-Year Plan," *Planovoye Khozyaistvo*, December, 1930, p. 201.

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Area	*Per cent Farms Collectivized*	*Number of Otkhodniki Per 1,000 Rural Inhabitants*
Mordva	8.9	47.4
Penza	11.0	20.8
Kuznetsk	11.9	28.6
Syzran'	18.1	36.5
Ul'yanovsk	18.7	30.2
Buguruslan	31.1	25.4
Samara	35.6	17.4
Orenburg	40.2	12.7

This decrease in "temporary migration" noticeably reduced the labor supply in the cities. The difficulties of filling industry's requirements multiplied apace. Repeated attempts at legislative or administrative remedial action (cf. Chapter Two below) were only partially successful.

Urbanization Trends

464 Today there can no longer be any doubt that the half-rustic nature of the Russian working class was due to the prevalence of the small peasant farm, an economic unit that could neither sustain nor adequately occupy the peasant family. If he could not make a livelihood on the farm, the peasant went to the city to look for work and often stayed for the major part of the year. For the head of the family to take industrial or semi-industrial jobs was not only economically feasible but often imperative. Frequently it was more profitable to hire a farm hand for a while than to have the head of the family forego remunerative nonfarm employment. Collectivization changed all that.

Of course, rural overpopulation did not disappear and did not even lessen appreciably. In fact, collectivization initially served to increase the manpower surplus on the farms.[41] And yet, *otkhod* declined. Besides, there appeared a new phenomenon, a pronounced "flight from the city." Even old industrial workers, loyal to industry during the stormy years of collectivization (1929-

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[41] The opposite trend did not become apparent until several years later. Then, in the late 1930's, new projects were launched on the collective farms and new employment possibilities materialized, provided by soil improvement and conservation, cultivation of commercial plants, construction work, etc. This "industrialization" of agriculture tended to ease the pressure of overpopulation.

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1931), seemed to gravitate back to the farm now that the *kolhozes* were growing strong.

Thus the official newspaper for industry wrote in 1934:[44]

> "Considerable changes in the composition of the labor force in the Donets mines are more clearly visible from year to year. Whereas the Donets Basin used to have a surplus of manpower in the winter months, today whole trusts, not just single mines, complain of manpower shortages . . . Nearly 50 per cent of the workers of the OGPU Mine (250 people) have announced their intention to quit, and more than a hundred add that they want to go 'home,' to the village. Things are no better in the largest mines of the Kadiyev coal trust, such as 'Il'yitch,' 'Krivorozh'ye,' etc. Unfortunately, the case of the Kadiyev coal trust is by no means exceptional."

The industry newspaper sounded a warning: "'There are not a few jobs being quit by miners who have been at work in the mines for eight or ten years." The same trend, though less conspicuously, showed up in other industries. It was surely no accident that in 1933, despite a 600,000 drop in industrial employment, there were no visible signs of unemployment in the urban labor market.

Yet although *otkhod* in the usual sense decreased and in additon there were people leaving the cities, a cross-current set in eventually.

In the most turbulent years in the countryside (principally 1930 and 1931) a stream of people moved from the villages into the cities. Certainly it is no accident that Soviet novels, dealing with the workers' life in factories and above all on the vast industrial construction jobs of the early thirties, keep bringing up "de-kulakized" and "*kulak* children." But this movement did not stop with the *kulaks*. It was soon clear that the families of *kolkhoz* members also furnished multitudes of "country fugitives," although the influx of migrants from the *kolkhozes* was not large enough to meet the manpower demands of urban industry.

Taking place in already collectivized agriculture, this new exodus differed essentially from earlier peasant migrations. The bulk of the migrants no longer were heads of families, departing for a time. They were no longer interested in keeping their eco-

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[44] *Za Industrializatsiyu*, March 18, 1934.

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nomic connections with the farm. Increasing numbers resembled the majority of rural migrants in Western and Central Europe, young people who did not care to farm any more, who were ready to become city folks. They came to represent what was to Russia a rather new type: the urbanized industrial worker.

In 1934 a correspondent of the official industry newspaper drew a vivid picture of the change: [43]

> "The social composition of the workers who apply for work in the mines has changed; so has their attitude toward the mine. There was a time when the most common sight in the Donets coal mines was the temporary migrant who would spend part of the year working in the mine and would return to his village in summer, year in, year out. In recent years, quite a few of these workers have definitely settled down in the mining towns, while others have gone back to the country for good . . . But a completely new type of worker has been coming from the country. These are people who have not yet made up their minds where they will ultimately settle, near the mine or back in the village."

The same correspondent quoted figures taken from surveys among Donets miners in 1929 and 1932. The proportion of country-bred miners had not changed in those years; they numbered 61.5 per cent of the total in 1929, and 61.9 per cent in 1932. And yet an essential transformation had taken place. While 27.8 per cent of the miners interviewed in 1929 maintained close economic connections with the country, the corresponding figure in 1932 was only 17.9 per cent. In 1929, 10.1 per cent of the miners questioned had taken leave of absence to do farm labor during the busy season, in 1932 only 0.5 per cent.[44]

The disengagement of industrial labor from its rural background was in full swing.

Working Class Growth from 1932 to 1941

185 Under the First Five-Year Plan (1928-1932), the grand total of wage and salary earners rose from 11,600,000 to 22,900,000. This was far in excess of the goal set by the Plan, and caused misgivings among government and industrial leaders. In the fall

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[43] *Za Industrializatsiyu*, February 14, 1934.
[44] *Ibid.*

of 1931 the Supreme Economic Council issued a circular letter 185 (published October 30, 1931) which directed the management of all industrial plants "instantly" to bring the number employed in line with the level of industrial production, and henceforth to refrain from hiring new personnel unless specifically authorized. And when the trade union daily, *Trud*, ventured, in December, 1931, to announced a further increase in employment for 1932, the responsible editor was fired for violation of government directives.[47]

However, the increase in the number of wage and salary 185 earners in the whole economy envisioned for 1932 was still con- 464 siderable. It was to rise from 18,700,000 to 21,000,000, i.e., 12.3 per cent.[48] Details of the projected expansion were not released, but official comment indicated that the new personnel would be recruited mainly by employing more apprentices and apparently also more construction workers. On the whole, the government for the time being showed reluctance to increase industrial employment any further.[49]

Again, actual developments surpassed Plan estimates. In 1932 employment reached a new high. It rose 20.8 instead of 12.3 per cent, tantamount to an additional employment of 4,000,000.[50]

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[47] The incident was mentioned in *Trud* when it occurred. This once, I am unable to furnish an exact reference to the source. In Paris, during the war, I lost my file of *Trud*, and this newspaper has not been completely preserved in this country. Shortly after the incident occurred I related it at length in an article "Unemployment Again?" in the Russian-language *Sotsialisticheskii Vestnik (Socialist Courier)*, Berlin, 1932, No. 3.

[48] *Izvestiya*, December 26, 1931.

[49] Official reluctance toward further expansion in industrial employment found its expression in an editorial of the official trade union newspaper (*Trud*, January 21, 1932), which said: "This year the increase in the productivity of labor will be based chiefly on the most rigidly planned restriction of the number of wage and salary earners. The basic attitude of the Plan for 1932 is decisive reversal of the attitude toward hiring new employees . . . The increase in the number of wage and salary earners during the year will be very moderate as compared with the figure for the end of last year. Industrial establishments controlled by the Supreme Economic Council will hardly employ more workers on the yearly average than they did during the last quarter of 1931. Average railroad employment for the year will be 30,000 less than during the last quarter of the preceding year. Employees on the pay roll of the administration and public institutions will be reduced in number in 1932, in accordance with the directive for cutbacks in administrative expenses. The only group which, according to the Plan, is to undergo a further rapid increase is the apprentices; the number of apprentices is to increase 52 per cent in industrial establishments controlled by the Supreme Economic Council, 70 per cent in rail transport, 53 per cent in waterway transport, etc."

[50] Railroads as well as the administration and public institutions had been instructed to carry out cutbacks in 1932. Instead, there was increase in employment in both occupational divisions by 200,000 each. Cf. *Socialist Construction* . . ., as quoted *supra*, n. 15, p. 508

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464 For the first time since the start of large-scale economic planning, a substantial cut in employment was foreseen in the annual plan for 1933—from 22,900,000 to 21,300,000[51]—but the actual decrease was only 600,000 instead of 1,600,000.[52]

From 1934 on, employment climbed anew. The Second Five-Year Plan (1933-1937), passed in the beginning of 1934, envisioned a 6,000,000 increase in the number of wage and salary earners in all occupational divisions, from 22,900,000 to 28,900,000, a gain of 26.0 per cent.[53]

But while the First Five-Year Plan had seen its estimates far exceeded, the Second Five-Year Plan failed to see them fulfilled. Though the projected rate of increase was modest in comparison with that of the previous Plan, it was not attained. By 1937 the number of employed had risen 4,000,000 instead of 6,000,000, i.e., 17.6 instead of 26.0 per cent.[54]

Supplying industry with labor was more difficult than foreseen. Accordingly, a lower rate of increase was projected for the Third Five-Year Plan (1938-1942): total employment was to rise from 27,000,000 to 32,700,000 or 21.0 per cent.[55] On the eve of the war it seemed likely that this Plan would succeed; according to data published in 1941, the number employed in 1940 totaled 30,400,000, with 31,600,000 planned for 1941.[56]

How did this affect labor's share within the total population? The census of January 19, 1939 showed the population of the Soviet Union as 170,500,000. By 1940, it presumably approximated 174,000,000. This would account for a ratio of 175 wage and salary earners per thousand inhabitants, as compared with 77 per thousand in 1928, and 80 in 1913.

The numerical increase in wage workers and salaried employees under the three Five-Year Plans can be summarized in the following figures:

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[51] *Izvestiya*, January 31, 1933.

[52] The number employed was reduced by 850,000 in industry and by as much as 750,000 in building (approximately). This was compensated for by additional employment in a number of other occupational divisions. Cf. *Socialist Construction . . .*, as quoted *supra*, n. 15, p. 508

[53] *Second Five-Year Plan for the National Economy of the USSR*, Moscow, 1934, vol I, pp. 504 f.

[54] *Results of Fulfilling the Second Five-Year Plan*, Moscow, 1939, p. 104.

[55] *Resolutions of the Eighteenth Convention of the CPSU*, Moscow, 1939, p. 56.

[56] Nikolai A. Voznesensky, "The Economic Results of the Year 1940 and the Plan for the Economic Development of the USSR for 1941. Report to the Eighteenth Conference of the CPSU," *Bol'shevik*, 1941, Nos. 3-4, p. 53.

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Working Class Growth from 1928 to 1942 185 464

	Employment (in millions)		
	Last Year Before Plan	*Last Year Under Plan*	
		proposed	chieved
1st Five-Year Plan[57] (1928/29-32)	11.5	15.8	22.9
2nd Five-Year Plan (1933-37)	22.9	28.9	27.0
3rd Five-Year Plan (1938-42)	27.0	32.7	...

	Per Cent Increase	
	Plan Estimate	*Actual*
1st Five-Year Plan (1928/29-1932)	38.9	102.0
2nd Five-Year Plan (1933-1937)	26.0	17.6
3rd Five-Year Plan (1938-1942)	21.0	....

The enormous growth of the working class in less than one and a half decades of overall planning is a fact of great sociological importance, especially as the stratification of labor also underwent substantial changes. There was a marked increase in the proportion of manual workers, in particular in industry proper. Both processes involved transformations which reshaped the social pattern of the country. 178 464 565

At this point we shall add a few additional remarks on the growth of the working class, in so far as it reveals the metamorphosis of Russian labor—the formation of a new working class without rural ties.

Out of 12,500,000 new wage and salary earners who swelled the ranks of labor under the First Five-Year Plan, roughly 8,500,000 had come from the peasantry. Under the Second Five-Year Plan the industrial manpower supply was to depend much less on the rural influx. The number of employed was to rise by 6,000,000 from 1932 to 1937; in addition, 3,400,000 were needed to replace those eliminated by death, disability, etc. Of this total of 9,400,000 new wage and salary earners, only 3,200,000 were to be recruited on the farms; nearly two-thirds had to come from the cities.[58]

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[57] Under the First Five-Year Plan, figures proposed for the fifth year refer to the economic year of 1932-33, figures of actual results to the calendar year 1932.

[58] *Second Five-Year Plan* . . ., as quoted *supra*, n. 53, vol. I, pp. 338 f.

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964 Not even this modest influx from the countryside was certain: the authors of the Second Plan did not expect it to flow automatically, but proposed to assure it by rigorous labor control measures. With the scope of rural migration not safely predictable, the problem of mobilizing the urban manpower reserves—particularly that of inducing housewives to work for wages—assumed paramount importance. (See below, Chapter Two.)

The scarcity of statistical material prevents an exact analysis of these trends between 1932 and 1937. The increase in the total number of wage and salary earners lagged considerably behind the Plan estimate. But there was a very substantial rise in the industrial employment of women. As a recruitment source of industrial labor, the city obviously played an even larger part than it had been assigned in the Plan. It is safe to assume that this trend has gained in significance during the subsequent years.

The Working Class in the War and Postwar Years

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722 The war added considerable momentum to the trend here described. Above all, it brought on an acute labor shortage. Industry had to give up a great many workers for service in the armed forces. No data were ever published on the number of military draftees nor on that of occupational exemptions and deferments;[10] neither were there any indications as to the rules which governed releases from draft on occupational grounds. As far as can be judged from reports on conditions in industry, only limited numbers of workers subject to military service were retained in the plants (especially in the first one to one-and-a-half years of the war), and only among skilled workers in war industry proper was there a considerable percentage of exemptions.

Even more affected by the draft was rural labor, an import-

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[702] [10] The information available on the numbers of persons drafted into the armed forces, or classes called up, is neither exact nor comprehensive. According to unverified data circulating outside of the Soviet Union, the wartime draft covered men between 18 and 54 or 55 and comprised 37 or 38 classes (probably taking into account the age shifts in wartime). To a certain extent this assumption is borne out by official data on discharges. The first three demobilization orders (*Pravda*, June 23, and September 26, 1945; March 21, 1946) referred to 13, 10 or 6 classes respectively, a total of 29. After these 29 classes had been discharged, the Soviet Union retained armed forces far in excess of peacetime effectives. The fourth demobilization act (*Pravda*, October 25, 1946) merely ordered the discharge of "the *seriatim* oldest age group."

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ant source of manpower for industry, and notably for "mass projects" which did not require special skills. Suffice it to say that the proportion of women in the able-bodied rural population had risen from 52 per cent at the beginning of 1939 to 71 per cent at the beginning of 1943.[60] The farm population diminished so rapidly in the early stages of the war that organized recruitment of manpower on the farms (see Chapter Two) had to be discontinued in the first war year. The conscription of city dwellers for farm work was finally introduced in 1942 (see Chapter Three).

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Under these circumstances the greatest possible utilization of urban labor reserves became a necessity. Above all, it manifested itself in a vast increase in female industrial labor (see Chapter Two). In addition, the employment of youth in industry was greatly expanded, and older workers, already eliminated from the labor process, were "re-activated." The result was a shift in the age structure of the industrial working class. Between 1939 and 1942 the quota of boys and girls under eighteen rose from 6 to 15 per cent of the total industrial labor force, the quota of workers from eighteen to forty-nine years of age dropped from 85 to 73 per cent, and the quota of older workers, aged fifty or more, rose from 9 to 12 per cent.[61] A definite compilation of the figures for male and female industrial workers would have made the shift in the male age groups even more evident. Nor was the process completed by 1942. There were simply no later statistics published.

However significant, the influx of these new workers could not insure the replenishment of the war-depleted plant labor pools. Between 1940 and 1943, there was a 38 per cent drop in the number of workers and employees in the whole economy and administration.[62] In industry proper, while less marked, it still amounted to 31 per cent.[63] Of course, this drop was partly due to the fact that important areas of the Soviet Union were still German-occupied in 1943, and economic reconstruction in the parts already liberated had only just begun. But even in 1945, when the war was over and the work of reconstruction far advanced, the number of employed workers remained considerably below pre-war levels.

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[60] N. A. Voznesensky, *The War Economy of the USSR in the Period of the War for the Fatherland*, Moscow, 1947, p. 113.

[61] *Ibid.*, pp. 112 f.

[62] *Ibid.*, p. 109.

[63] Calculated on the basis of Voznesensky's figures, *ibid.*, p. 109.

464 It has been mentioned before that the over-all total of wage workers and salaried employees in all branches of the Soviet economy and administration had reached 30,400,000 by 1940. This figure referred to the Soviet Union within its old borders. Expansion has since increased the Soviet population by some 14 per cent, and the 1940 employment totals in present Soviet territory must have substantially surpassed the figure of 30,400,000. Yet by 1945 the total number of manual and white-collar workers employed within the Soviet boundaries amounted to no more than 27,250,000.[64]

464 727 Toward the end of the war, and in the first postwar year, frequent complaints of an extraordinary labor shortage appeared in the Soviet press. The first news referred to peat. Only 70,200 workers worked on peat banks operated by the People's Commissariat for Power Generation, the main consumer of peat, by April 1, 1945, as against 97,800 a year earlier.[65] This, of course, may have been influenced by specific conditions.

But things were no better in textiles, although the textile industry as a whole suffered least from the war, as relatively few textile plants were located in occupied territory. Nevertheless, the press recorded in October, 1945, that plant and equipment in textile factories were largely idle for lack of manpower.[66] In March, 1946, it was announced on the floor of the Supreme Soviet that because of the labor shortage "about one-third of all spindles and looms in textile factories of Moscow city and Moscow province [were] kept in reserve, out of operation."[67] Machinery was also idle in the textile plants of Ivanovo province,[68] next to Moscow the largest textile district of the USSR. According to Aleksei N. Kosygin, vice-chairman of the Council of Ministers of the USSR, the total number employed in the textile industry dropped from 808,000 in 1940 to 400,000 in 1946.[69]

Similar conditions prevailed in hosiery, clothing, leather, shoe factories and other light-industry establishments. In Octo-

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[64] Calculated on the basis of figures announced by Voznesensky, in reporting to the Supreme Soviet on the Fourth Five-Year Plan. S. *Proceedings in the 1st Session of the Supreme Soviet of the USSR*, March, 1946, p. 66.

[65] *Pravda*, April 8, 1945.

[66] *Pravda*, October 28, 1945.

[67] Georgi M. Popov, deputy from Moscow, speaking during debates on the Fourth Five-Year Plan, *Proceedings . . .*, as quoted *supra*, n. 64, p. 256.

[68] *Pravda*, April 20, 1946.

[69] *Proceedings . . .*, as quoted *supra*, n. 64, p. 156.

ber, 1945, an official announcement referring to these industries 464
said:[70] "In many factories . . . equipment is not being utilized, 727
remaining idle because of lack of workers." In March, 1946, Vice-Premier Kosygin said[71] that "the number of workers in these industries contracted considerably" in comparison with prewar standards.

Naturally, coal mining, too, was seriously affected. Even metallurgy and metal manufactures which enjoyed manpower priorities during the war reported instances of acute manpower shortage. "Not enough workers" was indicated in October, 1945, as the chief reason why industrial plants in Yaroslavl failed to comply with plan assignments, and it was stressed that metal plants there were the worst hit.[72] At a session of the Supreme Soviet in March, 1946, Piotr F. Lomako, Minister for Non-Ferrous Industry, complained about the shortage of workers in plants under his Ministry.[73] Of course, the complaints of metallurgical and metal-manufacturing plants seemed almost reassuring, compared with the manpower tragedy that befell the textile industry and kindred consumer goods manufactures.

The Soviet leaders knew well that no large-scale influx of 464
manpower from rural areas could be counted on to overcome 185
these difficulties. In March, 1946, when the Fourth Five-Year Plan was confirmed, it was decided to resume the so-called organized enlistment of workers in the *kolkhozes;* but no great results seem to have been expected from this measure, and the main stress was laid on the mass production of skilled and semi-skilled labor by the occupational training of youth (see Chapter Two).

A few data may illustrate this. When the Fourth Five-Year Plan (1946-50) was drawn up, the total number of workers and employees in all economic and administrative branches was set at 33,500,000 for 1950 as against 27,250,000 in 1945.[74] The number of manual workers projected for industry proper in 1950 was not announced, and neither was the actual one in 1945. But as the latest available Soviet figures place the number of manual workers in industry (including apprentices and the so-called "lower

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[70] A. Shchegolev [the People's Commissar for Light Industry of the RSFSR], "Light-Industry Potentialities," *Pravda*, October 20, 1945.

[71] See n. 69 above.

[72] *Izvestiya*, October 26, 1945.

[73] *Proceedings* . . ., as quoted *supra*, n. 64, p. 300.

[74] *Ibid.*, p. 66.

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185 service personnel") at somewhat less than one-third of the total
464 employed labor force,[73] we may estimate that they numbered about 9,000,000 in 1945, and about 11,000,000 (according to plan) in 1950.

[883] In planning to add about two million more industrial workers, the number of juveniles to be enlisted and trained for skilled or semi-skilled labor in the course of the Five-Year Plan had been set at 4,500,000. While part of these were not to be trained for industry proper but for transportation and the building trades, which in the Soviet Union do not count as industrial branches, the bulk was—and still is—destined for industry. Even if we take regular replacement requirements into consideration, we find that an overwhelming majority of the new industrial workers was to consist of these juvenile trainees.

A great many of them are, of course, drafted from rural areas. (For more on that subject, and on this form of occupational training in general, see Chapter Two). Once trained, however, they do not go back to the country. Their assimilation into industrial labor is final. They no longer resemble the traditional half-rustic type of Russian worker.

Actual developments under the Fourth Five-Year Plan differed in detail from the projected ones. In particular, the total of workers and employees rose faster than had been envisioned, while the occupational training program could not quite produce the planned number of new, young workers. But in principle there was no change.

The plan envisioned a five-year increase of 6,250,000 in the total of workers and employees. In fact, the number of those employed in all economic and administrative branches rose as follows: [74]

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[73] According to the figures for 1937, workers and employees in all economic and administrative branches numbered 26,989,500, and manual workers in industry proper 8,827,500, or 32.7 per cent. For the year 1942 the draft of the Third Five-Year Plan estimated the total of workers and employees at 32,000,000 and the total of workers in industry proper at 10,314,000, or 32.2 per cent. Calculated according to figures quoted in *The Third Five-Year Plan of National Economic Development in the USSR* (Draft). Moscow, 1939, pp. 228-29.

[74] Taken from the yearly economic progress reports on the years 1946-50, published by the Central Statistical Administration in *Izvestiya* of January 21, 1947, January 18, 1948, January 20, 1949, January 18, 1950, and January 27, 1951. In the 1950 report, unlike those on the years from 1946 to 1949, the increase in employ-

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in 1946 by 3,000,000
" 1947 " 1,200,000
" 1948 " 2,000,000
" 1949 " 1,800,000
" 1950 " 2,200,000

Thus the five-year increase was not 6,250,000, as it should have been according to plan, but approximately 10,200,000, and by 1950 the total number of workers and employees had not reached 33,500,000 but nearly 37,500,000. Correspondingly the number of manual industrial workers reached between 12,000,000 and 12,500,000 in 1950—an increase over 1945 of from 3,000,000 to 3,500,000. The number of juveniles drafted for occupational training and trained amounted to some 3,400,000 in the five years (see Chapter Two). The influx into industry of the specially trained juveniles remained decisive.

Another interesting point shown by these statistics is the unusually sharp rise in employment figures during 1946, although in that particular year the number of juveniles delivered to industry by the occupational training program was a modest 382,000. The bulk of the new manpower in 1946 came from another source, and the assumption suggests itself that an unexpectedly large number of men discharged from the army sought and found employment as manual and white-collar workers. Hundreds of thousands, possibly millions who went to war from the villages and had as yet no families of their own did not return to their villages after the war years. Instead, they were absorbed into the

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ment is not given as an annual average. Instead, the total of workers and employees at the end of 1950 is given as [illegible], and at the same time this figure is said to exceed that of the end of 1949 by [illegible]. As we know from the quarterly reports on the first nine months of 1950 (*Izvestiya* of April 27, July 28, and October 24, 1950) that the average employment totals in these quarters exceeded the corresponding figures for 1949 by [illegible], [illegible], and [illegible], respectively, we may assume that the annual average of workers and employees increased by [illegible] from 1949 to 1950, and that the average for 1950 was close to 37,[illegible].

As the number of workers and employees rose approximately evenly, the difference between the annual average and the figure at the year's end should amount to about half the annual increase. For 1950 that would mean about [illegible]—some [illegible] less than the difference between the nearly 37,[illegible] just calculated as the 1950 average and the [illegible] announced as the end-of-the-year figure. Presumably this discrepancy is due to the fact that some social group not previously classified as "workers and employees" was now counted in that category—perhaps the students of the occupational training schools of the so-called "State Labor Reserve" (cf. Chapter Two).

464 727 great mass of urban workers and employees, partly by the lower administrative machine. They, too, turned into workers who ceased to resemble the half-rustic worker type.

Today the process of developing a modern working class without rural ties is all but completed in the Soviet Union.

APPENDIX

Statistical Material on the Working Class

464 162 Available statistical data on the development of industrial labor in Russia during the last half-century are not easily compared and summarized. Statistical methods and sociological classifications differed so widely during the period under review that the coördination of individual data meets with great obstacles.

Data on the number of wage and salary earners vary considerably according to different sources. But if their juxtaposition in a single table would hardly make sense, the statistical evidence on hand can be presented in several individual surveys.

A study published in 1926 by a Soviet author[77] offers processed census data which may be used for the purposes of the present survey. The following table draws on this particular source, presenting material for the period from 1897 to 1924. All data refer to the pre-1939 territory of the Soviet Union, for both the Soviet period and the prerevolutionary period:

Wage and Salary Earners in Russia

(in thousands)

	1897	*1913*	*1922/23*	*1923/24*
Grand Total	7,905	11,200	6,636	7,397
Thereof:				
Industry, all classes	2,202	3,636	1,958	2,150
(a) large-scale	1,622	2,776	1,659	1,815
(b) small-scale	580	860	300	335
Railroads	347	705	862	875
Communications	37	72	92	87
Commerce	367	451	306	380
Agriculture	2,775	3,000	1,100	1,300

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[77] B. Gukhman, *The Size of the Proletariat and Wages in the USSR*, Moscow, 1926, p. 29.

Official publications under the Five-Year Plans followed a different, more detailed pattern, but even within the framework of this new pattern the figures for the individual years are not always comparable. In consequence, the following table does not go beyond 1935; data are based on the official statistical abstract issued in 1934, and completed or revised in accordance with the 1936 edition of the same source.[78]

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Wage and Salary Earners in the USSR, 1924-1935
(in thousands)

	1923/24	*1924/25*	*1925/26*	*1926/27*	*1928*	*1929*
Grand Total	...	8,532	10,173	10,944	11,599	12,168
Thereof:						
Large-scale industry	1,795	2,107	2,678	2,839	3,096	3,366
Building	194	287	426	547	723	918
Transportation:						
Total	1,038	1,058	1,240	1,302	1,270	1,302
(a) Railroads	802	806	962	1,006	971	984
(b) Waterways	82	86	99	111	104	111
(c) Other	154	166	179	185	195	207
Communications	81	82	94	95	95	120
Commerce	248	374	471	515	532	627
Public eating places	21	33	45	49	55	79
Education	493	551	603	715	789	819
Public health	252	271	324	365	399	438
Finance	48	66	82	86	95	108
Other government services	887	965	1,082	1,120	1,174	1,255
Agriculture	...	...	...	...	1,676	1,576
Lumber	...	...	...	...	337	415
Domestic service	133	193	253	317	377	396

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[78] *Socialist Construction of the USSR. Statistical Year-Book*, Moscow, 1934, pp. 306 f.; 1936, pp. 508 f.

	1930	*1931*	*1932*	*1933*	*1934*	*1935*
Grand Total	14,531	18,990	22,943	22,325	23,681	24,770
Thereof:						
Large-scale industry	4,264	5,483	6,481	6,229	6,531	7,066
Building	1,623	2,549	3,126	2,361	2,618	2,204
Transportation:						
Total	1,499	1,927	2,222	2,305	2,556	2,922
(a) Railroads	1,084	1,320	1,527	1,474	1,605	1,789
(b) Waterways	132	177	196	189	222	246
(c) Other	283	430	500	642	730	887
Communications	153	197	224	258	295	334
Commerce	815	1,078	1,411	1,375	1,465	1,650
Public eating places	181	365	515	552	546	485
Education	921	1,153	1,347	1,463	1,569	1,725
Public Health	477	562	647	681	739	809
Finance	101	116	128	132	134	152
Other government services	1,470	1,712	1,918	1,753	1,680	1,745
Agriculture	1,552	2,060	2,858	2,819	3,094	2,974
Lumber	611	857	1,140	1,193	1,209	1,300
Domestic service	253	228	216	...	...	...

More recently, data referring to the last years covered by the table above were partly revised and regrouped so as to offer a basis for comparison with subsequent years. The statistical abstract issued in 1939[79] compared the number of wage and salary earners in 1932, the last year of the First Five-Year Plan, with that in 1937, the last year of the Second Five-Year Plan. These data, complemented by projected figures for 1942, the last year of the Third Five-Year Plan,[80] follow:

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[79] *Socialist Construction in the USSR, 1933-1938,* Moscow, 1939. p. 138.

[80] See the draft of the Third Five-Year Plan, as quoted *supra,* n. 75, pp. 228 f.—When the Third Five-Year Plan was approved, the projected figure for wage and salary earners in 1942 was raised by 700,000 (to 32,700,000). The approved figures for the different branches of economy were not made public.

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Wage and Salary Earners in the USSR at the end of the First and Second Five-Year Plans, and Projected Figures of the Third Five-Year Plan (in thousands)

	1932	*1937*	*1942* (planned)
Grand Total	22,942.8	26,989.5	32,000
Thereof:			
Industry	7,999.8	10,111.7	11,899
thereof:			
manual workers		8,048.0	9,184
technical employees		697.7	910
other white-collar workers		586.5	675
lower service personnel		475.2	630
apprentices		303.4	500
Building	2,835.1	2,023.2	1,829
thereof:			
manual workers		1,672.6	1,497
technical employees		119.9	129
other white-collar workers		122.5	98
lower service personnel		97.5	91
apprentices		10.7	14
Railway transportation	1,296.6	1,512.2	1,700
Water transportation	145.5	179.5	230
Other transportation	598.5	1,092.1	1,735
Communications	224.3	375.0	500
Commerce	1,410.8	1,993.9	2,500
Public eating places	515.1	395.5	560
Finance	128.4	192.8	230
Education	1,351.1	2,303.0	2,900
Arts	84.5	122.0	165
Health service	647.2	1,117.6	1,600
Other government services	1,833.5	1,743.3	2,000
Housing and municipal services		753.7	920
Agriculture	2,857.5	2,482.6	2,650
Lumber	196.1	247.9	325
Others		246.0	195

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Social Group	*Per Cent of Total Population*	
Wage earners	32.19	49.73
Salary earners	17.54	
Peasants on collevtivized farms	44.61	46.90
Artisans organized in producers' cooperatives	2.29	
Peasants on independent individual farms	1.78	2.60
Artisans not organized in cooperatives	.82	
Others	.77	
Total	100.00	

464 These figures should be treated with caution. The precentage of workers and employees was put at 34.7 for 1937 in the statistical reference work cited ~~above~~, which appeared in 1939. It is true that certain shifts took place between 1937 and January, 1939, and the percentage of workers and employees might—in view of the shifts in the immediately preceding years—be estimated at perhaps 37, but under no circumstances at 49.7. Whence this sudden rise of a full third in the percentage total?

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466 It is apparent that the data for workers and employees in the two tables given above do not refer to the same group of persons. In the compilation of the first table (through 1937), only persons occupying a regular work status were considered to be workers and employees, in accordance with the data in the current statistics for the labor force; in the compilation of the second table (for 1939), however, several million additional persons were counted as workers and employees. It is known from the statements of former Soviet slaves that the slaves (in concentration camps, etc.) were included in the national census of 1939 and that they were registered, not according to their former professions, but according to their work in the camps, i.e., in all cases as workers and employees. This was confirmed recently in a work by a former Soviet statistician, who took part in the census of 1939.[64] The number of workers and employees according to the census of 1939 therefore had to be considerably higher than the number of workers and employees according to the current statistics for the labor force.

If this were the only cause of the great discrepancy between the two figures given (37.0 and 49.7 per cent), the number of slaves in 1939 would have to equal about a third of the number of workers and employees holding a regular work status, that is, it would have to reach a total of some 10,000,000. In reality, however, the number of slaves at the beginning of 1939 was probably somewhat smaller, since part of the group "workers and employees (with families)" in the 1939 census should perhaps be attributed to certain tricks on the part of the official statisticians, who were set the task of computing the highest possible percentage figure for the "workers and employees" group. For this reason, a farm family perhaps, whose head had been employed however briefly as a worker in industry, building, etc., was counted in its entirety as a workers' family (note the great difference between the 1937 and 1939 data for collective farmers and, even more, for individual farmers). Some other statistical tricks were perhaps also employed. All this, however, can explain only a relatively limited part of the 10,000,000 discrepancy. These 10,000,000 were undoubtedly, for the most part, slaves.[53]

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[64] N. Galin, *How Censuses Were Carried Out in the USSR.* (Russian), Munich, 1951, p. 20.

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[53] See my article, "Statistics on Slave Labor," in *Sotsialisticheskii Vestnik*, December, 1951.

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Chapter Two

TRANSFORMATION OF THE LABOR MARKET

Labor Market and Labor Market Policy Until 1930.—The Turning Point: Tightening of the Labor Supply.—Main Problem after 1930: Industrial Labor Supply.—The End of Unemployment Insurance and of the Labor Market.—Manpower Recruitment on the Farms.—"Activation" of Urban Labor Reserves: Female Labor.—"Activation" of Juvenile Reserves.—Preparations for a Planned Distribution of Manpower.

Labor Market and Labor Market Policy Until 1930 464

From the very outset, the Soviet labor market was influenced by the distinctive features of Russian industrial labor and its close ties with the rural economy. Between 1918 and 1921, in the years of economic disintegration, millions fled from the cities to the country. The urban labor market was deserted to the point where even the shrunken urban economy could only be kept functioning by the introduction of compulsory labor.[1] Economic recovery, which began in 1921, and the reemployment of millions started an influx of migrants from the countryside. Unemployment, hitherto latent, became manifest. Russia presented a peculiar phenomenon: the number of unemployed rose right along with the number of employed.

As the rise in employment was dealt with in the preceding chapter, it remains to point out the unemployment trend. According to employment exchange statistics, unemployment increased

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[1] Cf. my article "Die Arbeitspflicht in Russland," *Archiv für Rechts- und Wirtschaftsphilosophie*, October, 1925.

464 rapidly from early in 1922, as will be seen from the following figures:[2]

	Registered Unemployed (in thousands)
1922 January	175
July	436
1923 January	625
July	1,000
1924 January	1,240
July	1,340

In the second half of 1924 a reorganization of the employment exchanges was initiated. With the reorganization of the service, compulsory hiring through these exchanges was relaxed and the sifting of the waiting lists of job applicants ordered. As an immediate consequence, the number of registered unemployed dropped from July 1924 on, if only for a short time. For 1924/25 and the following years the yearly average figures were as follows:[3]

	Registered Unemployed (in thousands)
1924/25	848
1925/26	1,017
1926/27	1,242
1927/28	1,290

Corresponding yearly averages for 1928/29 and 1929/30 are not known. The following figures reveal a further increase in unemployment until it began to recede in the second half of 1929:[4]

Years	*Registered Unemployed* (in thousands)	
	April 1	*October 1*
1927	1,478	1,041
1928	1,576	1,365
1929	1,741	1,242
1930	1,081	. . .

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[2] A. Mints, "The Labor Market in 1924," *Voprosy Truda*, March, 1925, p. 24.

[3] *Control Figures for the National Economy of the USSR for 1927/28*, Moscow, 1928, p. 215; *Control Figures . . . for 1928/29*, Moscow, 1929, p. 156.

[4] M. Romanov, "Labor Market Prospects in the USSR," *Voprosy Truda*, July-August, 1930, p. 46.

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A labor shortage, which we shall later take up in detail, be- 464 ×
gan to develop and soon led to basic changes in manpower pol- 656
icy—changes which affected all subsequent trends. Before discussing these trends, however, let us look briefly at the organization of the labor market in the second half of the 1920's.

The reorganization of the government-operated employment exchanges, begun in the second half of 1924, was completed early in 1925. Sec. 7 of the Labor Code, which required that hiring be done only through employment exchanges, was repealed.[5] Employers were now free to hire whomever they wanted, and employees were free to take any job they wished.

Did the government mean to relax its rigid hold on the labor market—so to speak, to leave the balancing supply and demand to the "free play of forces"? Certainly not. It was soon clear that this was neither intended nor did it actually take place.

The formal repeal of compulsory hiring through the employment exchanges did not inaugurate any "liberal" policy. The governmental employment exchanges, as organized prior to 1925, were simply not up to the tasks facing them in the framework of a labor policy based on their hiring monopoly. There was no end to the complaint of their red tape and inefficiency. The abrogation of Sec. 7 of the Labor Code was merely the first step toward a reorganization that had become inevitable.

The sequel to this first step was a unionist labor market pol- 464
icy that revived the idea of compulsory hiring through the em- 656 ×
ployment exchanges and put it into practice in a new form: by 467
incorporating it in union contracts. There could be no question, under Soviet conditions, of a conflict between governmental and union measures in the field of labor market policy. The repeal of Sec. 7 of the Labor Code and the use of collective bargaining to reintroduce compulsory hiring through the employment exchanges were two links in a single chain of events.

The new method of letting the unions enforce compulsory hiring through employment exchanges was first applied in 1925. By 1926 its use was widespread. The Seventh Trade Union Convention, meeting in December 1926, resolved:[6] "In negotiating

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[5] Decision of the CEC and CPC of the USSR, January 2, 1925. *Izvestiya,* January 14, 1925.

[6] Ya. Gindin, "The Seventh Trade Union Convention of the USSR and Unemployment," *Vestnik Truda,* February, 1927, p. 2.